

**EPA Registration Number**

**79506-57 Vol 5**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

May 15, 2015

Sherry B. Hutcheson  
United Phosphorus, Inc.  
630 Freedom Business Center, Ste 402  
King of Prussia, PA 19406

Subject: Label Amendment – Add Already Approved Grasses Use  
Product Name: BIFENTURE EC AGRICULTURAL INSECTICIDE  
EPA Registration Number: 70506-57  
Application Date: December 17, 2014  
Decision Number: 498901

Dear Ms. Hutcheson:

The amended label referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act, as amended, is acceptable. This approval does not affect any conditions that were previously imposed on this registration. You continue to be subject to existing conditions on your registration and any deadlines connected with them.

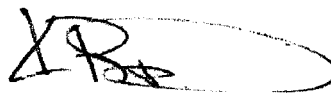
A stamped copy of your labeling is enclosed for your records. This labeling supersedes all previously accepted labeling. You must submit one copy of the final printed labeling before you release the product for shipment with the new labeling. In accordance with 40 CFR 152.130(c), you may distribute or sell this product under the previously approved labeling for 18 months from the date of this letter. After 18 months, you may only distribute or sell this product if it bears this new revised labeling or subsequently approved labeling. "To distribute or sell" is defined under FIFRA section 2(gg) and its implementing regulation at 40 CFR 152.3.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

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Your release for shipment of the product constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. If you have any questions, please contact Maggie Rudick by phone at 703-347-0257, or via email at [rudick.maggie@epa.gov](mailto:rudick.maggie@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'Kable Bo Davis', enclosed within a large, loopy oval shape.

Kable Bo Davis, Product Manager 3  
Invertebrate and Vertebrate Branch 1  
Registration Division (7505P)  
Office of Pesticide Programs

Enclosure

**RESTRICTED USE PESTICIDE**  
**Toxic to fish and aquatic organisms.**  
**For retail sale to and use only by certified applicators, or persons under their direct supervision, and only for the uses covered by the certified applicator's certification.**

GROUP	3A	INSECTICIDE
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### BIFENTURE EC AGRICULTURAL INSECTICIDE

Active Ingredient:	By Wt.
Bifenthrin* (2 methyl[1,1'-biphenyl]-3-yl) methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate .....	25.1%
Other Ingredients**:	74.9%
TOTAL .....	100.0%

\*Cis isomers 97% minimum, trans isomers 3% maximum.

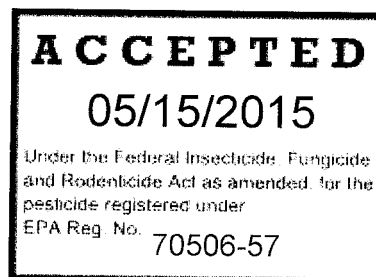
\*\*Contain xylene range aromatic solvents

This product contains 2 pounds active ingredient per gallon.

#### KEEP OUT OF REACH OF CHILDREN WARNING AVISO

This label must be in the possession of the user at the time of application.

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)



FIRST AID	
If swallowed	<ul style="list-style-type: none"> <li>Call a poison control center or doctor immediately for treatment advice.</li> <li>Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>Do not give <b>any</b> liquid to the person.</li> <li>Do not give anything by mouth to an unconscious person.</li> </ul>
If in eyes	<ul style="list-style-type: none"> <li>Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
If inhaled	<ul style="list-style-type: none"> <li>Move person to fresh air.</li> <li>If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>Call a poison control center or doctor for further treatment advice.</li> </ul>
If on skin or clothing	<ul style="list-style-type: none"> <li>Take off contaminated clothing.</li> <li>Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>Call a poison control center or doctor for treatment advice.</li> </ul>
<b>NOTE TO PHYSICIAN</b> This product is a pyrethroid. If large amounts have been ingested, the stomach and intestine should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided. Contains petroleum distillates. Vomiting may cause aspiration pneumonia.	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. FOR EMERGENCY MEDICAL ASSISTANCE, CALL THE ROCKY MOUNTAIN POISON CONTROL CENTER 1-866-673-6671.	

**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident,  
call CHEMTREC 1-800-424-9300.**

United Phosphorus, Inc.  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406 1-800-438-6071

**EPA Reg. No. 70506-57**  
**EPA Est. No.**  
**Net Contents:**

**PRECAUTIONARY STATEMENTS**  
**Hazards to Humans and Domestic Animals**  
**Warning**

May be fatal if swallowed. Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield or safety glasses). Harmful if absorbed through skin or inhaled. Avoid breathing spray mist. Avoid contact with skin. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

**Personal Protective Equipment (PPE):**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category E on an EPA chemical resistance category selection chart.

**Handlers who may be exposed to the dilute through application or other tasks must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, Nitrile rubber, neoprene rubber or Viton
- Shoes plus socks

**Handlers who may be exposed to the concentrate through mixing, loading, application or other tasks must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, Nitrile rubber, neoprene rubber, or Viton
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS**

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**Environmental Hazards**

This pesticide is extremely toxic to fish and aquatic invertebrates. Use with care when applying in areas adjacent to any body of water. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not make applications when weather conditions favor drift from treated areas. Drift and run-off from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

The use of bifenthrin is prohibited in areas that may result in exposure of endangered species to bifenthrin. Prior to use in a particular county contact the local extension service for procedures and precautions to use to protect endangered species.

#### **Physical/Chemical Hazards**

Do not use or store near heat or open flame.

#### **DIRECTIONS FOR USE**

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

#### **Resistance:**

Any insect/mite population may contain individual insects that may develop resistance to a specific pesticide product used in consecutive generations to control these pests. Prediction of resistance development is uncertain. Follow appropriate resistance management strategies. Contact your local extension specialist or certified crop advisors for any additional pesticide resistance management and/or Integrated Pest Management recommendations for the specific site and pest problems in your area.

If resistance to this product develops in your area, you may find reduced control from this product or other products with a similar mode of action. If poor performance cannot be related to improper application methods or extreme weather, it is possible that a resistant strain of insect may be present. If poor control occurs and resistance is a reasonable cause, immediately consult with your local UPI representative or agricultural advisor for the best alternative method of control for your area.

#### **AGRICULTURAL USE REQUIREMENTS**

Use this product only in accordance with its labeling and with the Worker Protection Standard 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during restricted-entry interval (REI) of **12** hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls.
- Chemical-resistant gloves, such as barrier laminate or nitrile rubber or neoprene rubber or Viton.
- Shoes plus socks.

## STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

**Pesticide Storage:** Store above 40°F.

**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

**Container Disposal: Refillable container.** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

**Container Handling: Nonrefillable container. Do not reuse or refill this container.**

Clean container promptly after emptying.

*[For containers smaller than 5 gallons]* Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container  $\frac{3}{4}$  full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

*[For containers larger than 5 gallons]* Triple rinse or pressure rinse as follows:

Triple rinse: Empty the remaining contents into application equipment or a mix tank. Fill the container  $\frac{1}{4}$  full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after flow begins to drip.

Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.



## Chemigation Use Directions

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

Use a minimum of 0.75 inch of water per acre for LEPA irrigation. Use 1 to 2 pints per acre of non-emulsified oils when used as the diluent.

The set up and calibration of chemigation equipment are important to achieve control of target insect pests. Crop injury, lack of effectiveness, or illegal residues in the crop can result from non-uniform distribution of treated water. Contact your State Agricultural Extension Service specialists, equipment manufacturers or other experts for advice on the suitability of the equipment set up for optimum control of the target insect pests.

A person knowledgeable of the chemigation system and responsible for its operations, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise. Failure to cease application during a mechanical stoppage may result in undesirable residues to adjacent areas.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Apply Bifenture EC Agricultural Insecticide continuously for the duration of the water application. Dilute Bifenture EC Agricultural Insecticide in sufficient volume to ensure accurate application over the area to be treated. Use a minimum of 0.5 inch per acre of irrigation water for application by chemigation. No agitation is required if a suitable diluent is used. Conduct a diluent test to check that phase separation will not occur during dilution and application. If uniform dilution is not achieved during the entire period of application, undesirable residues or less than desirable control may occur.

### **Rotation Crop Restrictions**

Crops for which bifenthrin tolerances exist may be rotated at any time. All other crops may be rotated 30 days after the last application.

### **Tank-Mixes**

Apply Bifenture EC Agricultural Insecticide with other products registered for the same crops. Read and follow all applicable directions, restrictions, and precautions on the EPA-registered labels for other tank mix partners.

### **Buffer Zones**

#### **Vegetative Buffer Strip**

Construct and maintain a minimum 10-foot wide vegetative filter strip of grass or other permanent vegetation between the field edge and down gradient aquatic habitat (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries; and commercial fish farm ponds).

Only apply products containing bifenthrin onto fields where a maintained vegetative buffer strip of at least 10 feet exists between the field and down gradient aquatic habitat.

For guidance, refer to the following publication for information on constructing and maintaining effective buffers: *Conservation Buffers to Reduce Pesticide Losses*. Natural Resources Conservation Services. USDA, NRCS. 2000. Fort Worth, Texas. 21 pp. <http://www.in.nrcs.usda.gov/technical/agronomy/newconbuf.pdf>.

#### **Buffer Zone for Ground Application ( groundboom, overhead chemigation, or airblast)**

Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

#### **Buffer Zone for ULV Aerial Application**

Do not apply within 450 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

#### **Buffer Zone for Non-ULV Aerial Application**

Do not apply within 150 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

### **Spray Drift Requirements**

#### **Wind Direction and Speed**

Only apply this product if the wind direction favors on-target deposition.  
Do not apply when the wind velocity exceeds 15 mph.

### **Temperature Inversions**

Do not make aerial or ground applications into temperature inversions.

Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

### **Droplet Size**

Use only medium or coarser spray nozzles (for ground and non-ULV aerial application) according to ASAE (S572) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

#### **Additional Requirements for Ground Applications**

Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to applications.

For ground boom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy.

For airblast applications, turn off outward pointing nozzles at row ends and when spraying the outer two rows. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

#### **Additional Requirements for Aerial Applications**

The spray boom should be mounted on the aircraft as to minimize drift caused by wingtip or rotor vortices. The minimum practical boom length should be used and must not exceed 75% of the wing span or 80% rotor diameter.

Flight speed and nozzle orientation must be considered in determining droplet size.

Spray must be released at the lowest height consistent with pest control and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.

When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind.

#### **Instructions for Application**

The following Directions for Use tables provide, in some cases, rate ranges. Use the lower application rates when insect pressure is light to moderate. Use the higher application rates when insect populations are high, when treating mites and when climate is arid.

Cultivation within 10 feet of a water body is prohibited to allow for the growth of a vegetated filter strip.

In New York State this product may not be applied within 100 feet (using ground equipment) to 300 feet (using aerial equipment) of coastal marshes or permanent streams that drain into coastal marshes.

#### **INDEX TO CROPS LISTED ON THIS LABEL**

Artichokes  
Beans and Peas (Dry)  
Beans and Peas (Succulent)  
Beets, Garden (see Root Crops)  
Brassica  
Caneberries  
Canola, Crambe, Rapeseed  
Christmas Trees  
Cilantro, Coriander  
Citrus  
Conifer Seed Orchards (AL, AR, FL, GA, LA, MS, OK, SC, TN, TX, VA only)  
Cotton  
Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed (At Planting Use)

Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed (PRE & PPI)  
Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed (Foliar Use)  
Sweet Corn, Sweet Corn Grown for Seed (At Planting Use)  
Sweet Corn, Sweet Corn Grown for Seed (Foliar Use)  
Cucurbits  
Fruiting Vegetables  
Grapes  
Hops  
Leafy Brassica Greens (Crop Subgroup 5-B)  
Lettuce, Head  
Mayhaw  
Okra  
Peanut  
Pears  
Root Crops (except Sugarbeets)  
Soybean  
Spinach  
Tobacco  
Tomatoes, Tomatillos (see under Fruiting Vegetable instructions)  
Tree Nuts  
Tuberous and Corm Vegetables (Crop Subgroup 1-C)  
Grass Forage, Fodder, and Hay Group and Grass Grown for Seed  
Sod Farms

# ARTICHOKES

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Artichoke Plume Moth Cribrate Weevil	0.10 lb. ai (6.4 fl. oz. product)	Begin applications when pest population reaches damaging levels and repeat as necessary to maintain control.  Apply in water in a minimum of 75 gallons of spray/A by ground or in a minimum of 10 gallons/A by air.	5	Do not make applications less than 15 days apart. Do not apply more than 0.5 lb. a.i. (32.0 fl. oz. product) per acre per season.
Brown marmorated stinkbug	0.10 lb. ai (6.4 fl. oz. product)		3	

### SUCCULENT PEAS AND BEANS

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Pea (Pisum spp.) Dwarf pea Edible-pod pea English pea	Flea Beetle Aster Leafhopper Leafhoppers	0.025-0.10 lb. ai (1.6-6.4 fl. oz. product)	Apply in a minimum of 10 gallons/A by ground or in a minimum of 2 gallons/A by air. When applying by air, substitute 1- 2 quarts of emulsified oil for 1-2 quarts water if desired.	3	Do not apply more than 0.2 lb. a.i. (12.8 fl. oz. product) per acre per season.
Garden pea Green pea Snow pea Sugar snap pea Pigeon pea Bean (Phaseolus spp.): Broadbean (succulent) Lima bean (green) Runner bean Snap bean Wax bean Bean (Vigna spp.): Asparagus bean Blackeyed pea Chinese longbean Cowpeas Moth bean Southern pea Yardlong bean Jackbean Soybean (immature seed) Sword bean	Aphids Armyworms Beet Fall Southern Yellowstriped Beetles Bean Leaf Cucumber Japanese (adult) Mexican Bean Sap Bugs Plant Bugs Stink Bugs Tarnished Plant Bugs Alfalfa Caterpillar Cloverworm European Corn Borer Cutworms Western Bean Cutworm Corn Earworm Loopers Corn Rootworm (Adult) Thrips Webworms Pea Weevil Pea Leaf Weevil Whitefly Imported Cabbageworm Saltmarsh Caterpillar Tobacco Budworm Leafminers	0.033-0.10 lb. ai (2.1-6.4 fl. oz. product)	For best control thorough coverage is necessary.		
	Banks Grass Mite Carmine Mite Lygus Spp. Twospotted Spider Mite	0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)			
	Brown marmorated stinkbug Kudzu bug	0.1 lb ai (6.4 fl. oz product)			

## DRIED BEANS AND PEAS

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Dried cultivars of: Bean (Lupinus) Bean (Phaseolus) Field Bean Kidney Bean	Flea Beetle Aster Leafhopper Leafhoppers	0.025-0.10 lb ai (1.6-6.4 fl. oz. product)	Apply in a minimum of 10 gallons/A by ground or a minimum of 2 gallons/A by air. When applying by air, substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control thorough coverage is necessary.	14	Do not apply more than 0.2 lb. a.i. (12.8 fl. oz. product) per acre per season to peas. Do not apply more than 0.3 lb. a.i. (19.2 fl. oz. product) per acre per season to beans. Do not make applications less than 7 days apart.
Lima Bean (dry) Navy Bean Pinto Bean Tepary Bean Bean (Vigna) Adzuki Bean Blackeyed Pea Catjang Cowpea Crowder Pea Moth Bean Mung Bean Rice Bean Southern Pea Urd Bean Broad Bean (dry) Chickpea Guar Lablab Bean Lentil Pea (Pisum) Field Pea Pigeon Pea	Aphids Armyworms Beet Fall Southern Yellowstriped Beetles Bean Leaf Cucumber Japanese (adult) Mexican Bean Sap Bugs Plant Bugs Stink Bugs Tarnished Plant Bugs Alfalfa Caterpillar Cloverworm European Corn Borer Cutworms Western Bean Cutworm Corn Earworm Loopers Corn Rootworm (Adult) Thrips Webworms Pea Weevil Pea Leaf Weevil Whitefly Imported Cabbageworm Saltmarsh Caterpillar Tobacco Budworm Leafminers Grasshoppers	0.033-0.10 lb ai (2.1-6.4 fl. oz. product)			
	Banks Grass Mite Carmine Mite	0.08-0.10 lb ai (5.12-6.4 fl. oz.)			

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
	Lygus Spp. Twospotted Spider Mite	product)			
	Brown marmorated stinkbug	0.10 lb ai (6.4 fl. oz product)			



## BRASSICA

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Head and Stem Brassica Vegetables including: Broccoli Brussels Sprouts Cabbage Cauliflower Cavalo Broccolo Chinese Broccoli (gai lon, white flowering broccoli) Chinese Cabbage (napa) Chinese Mustard Cabbage (gai choy) Kohlrabi	Aphids Armyworms Corn Earworm Crickets Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Ground Beetles Imported Cabbageworm Leafhoppers Loopers Saltmarsh Caterpillar Stink Bugs Thrips Tobacco Budworm Whitefly Wireworm (Adults)	0.033-0.10 lb. ai (2.1-6.4 fl. oz. product)	Apply in water in a minimum of 10 gallons spray/A by ground or in a minimum of 2 gallons/A by air. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired when applying by air. For best control thorough coverage is necessary.	7	Do not apply more than 0.5 lb a.i. (32 fl. oz. of product) per acre per season.  Do not make more than 5 applications after bloom.  Do not make applications less than 7 days apart.
	Banks Grass Mite Carmine Mite Lygus spp. Pacific Spider Mite Twospotted Spider Mite	0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)			
	Brown marmorated stinkbug	0.10 lb ai (6.4 fl. oz product)			

### CANEBERRIES

Including Bingleberries, Blackberries, Dewberries, Loganberries, Lowberries, Marionberries, Olallieberries, Raspberries, Youngberries

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Leafrollers Orange Tortrix Root Weevils	0.05-0.10 lb. ai (3.2-6.4 fl. oz. product)	Apply in water in a minimum of 50 gallons/A by ground or in a minimum of 10 gallons/A by air. For best control thorough coverage of foliage is necessary.	3	Do not apply both pre-bloom foliar and pre-bloom drench applications.
Raspberry Crown Borer Spider Mites	0.10 lb. ai (6.4 fl. oz. product)	Make one pre-bloom application and if necessary one post-bloom application. For Crown Borer apply as a drench either post-harvest (fall) or pre-bloom (spring), using 0.1 lb ai/A in at least 200 gallons of water/A. Direct the spray at the crown of the plant. For best results, apply at higher water gallonages (up to 400 gal/A) or prior to a significant rainfall.		Do not apply more than 0.2 lb. a.i. (12.8 fl. oz. of product) per acre per season.
Brown marmorated stinkbug	0.10 lb. ai (6.4 fl. oz. product)			

### CANOLA, CRAMBE, RAPESEED

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Aphids Armyworms Cutworms Diamondback Moth Flea Beetle Flea Hopper Grasshopper Loopers Other Lepidopterous Larvae Plant Bug Seedpod Weevil Stink Bugs Thrips Whitefly	0.033-0.04 lb. ai (2.1-2.6 fl. oz. product)	Apply in water in a minimum of 10 gallons/A by ground or in a minimum of 2 gallons/A by air. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired when applying by air. For best control thorough coverage is necessary.	35	Do not apply more than 0.08 lb. a.i. (5.12 fl. oz. product) per acre per season. Do not make applications less than 14 days apart.

## CHRISTMAS TREES

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	RESTRICTIONS
Root Weevil Spruce Spider Mite Balsam twig aphid Balsam wooly adelgid Cinara aphid	0.06-0.2 lb ai (3.9-12.8 fl oz product)	Apply in water in a minimum of 20 gallons/A by ground, or in a minimum of 5 gallons/A by air.  Although this product is not expected to be phytotoxic to Christmas trees, it is recommended that application be made to a small representative group of plants to ensure that a particular variety is not unusually sensitive.	Do not apply more than 3 times in a crop year. Do not apply more than 0.2 lb ai (12.8 fl oz product) per acre per treatment. Do not apply through any type of irrigation system. Do not make applications less than 21 days apart.
Brown marmorated stinkbug	0.10 lb ai (6.4 fl. oz product)		

# CILANTRO, CORIANDER

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Aphids Beet Armyworm Cabbage Looper Cutworms Flea Beetles Grasshoppers Leafminers Saltmarsh Caterpillar Spotted Cucumber Beetle Thrips Whitefly	0.033 - 0.10 lb. ai (2.1 - 6.4 fl. oz. product)	For best control, thorough coverage is necessary. Apply as needed.  Apply in water in a minimum of 10 gallons of spray/A by ground or in a minimum of 2 gallons/A by air.	3	Do not make applications less than 7 days apart. Do not apply more than 0.50 lb. a.i. (32.0 fl. oz. of product) per acre per season.
Two Spotted Spider Mite	0.08 – 0.10 lb. ai (5.12 – 6.4 fl. oz. product)			
Brown marmorated stinkbug	0.10 lb ai (6.4 fl. oz product)			

## CITRUS

PEST	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Blue Green Citrus Root Weevil ( <i>Pachnaeus opalus</i> ) Brown Leaf Notcher ( <i>Epicaerus mexicanus</i> ) Diaprepes Root Weevil ( <i>Diaprepes abbreviatus</i> ) Little Leaf Notcher ( <i>Artipus floridanus</i> ) Southern Blue Green Citrus Roon Weevil ( <i>Pachnaeus Litus</i> )	0.25-0.50 lb ai (16-32 fl oz product)	<p>Apply by ground in a minimum of 40 gallons of dilute spray per acre. Make uniform application to bare soil beneath the tree from the trunk to the drip line of the tree.</p> <p>Use a higher spray volume to insure uniformity of coverage. Pre- and post-application irrigation may also aid in uniform coverage. Bifenture protects tree roots from root weevils by forming a barrier of pesticide through which they must burrow when the neonates fall from the tree after hatching. After application minimize disturbance of the soil beneath the trees to maintain this barrier.</p> <p>It is important to time applications correctly. Peak emergence of adult Diaprepes Weevil varies by citrus growing region and is also dramatically affected by environmental factors such as soil moisture. Typically, two peaks are observed for Diaprepes, first in spring and then in late summer or early fall. For Southern Blue-Green and Blue-Green Citrus Weevils and Fuller Rose Beetle, a single emergence peak in the spring is typical. Brown and Little Leaf Notchers typically have three emergence peaks in spring, summer and fall.</p> <p>Since emergence varies seasonally and by location, observation of adults is the most accurate way to forecast timing of applications. Numbers of adults can be estimated by trapping during spring and summer during the active early morning and later afternoon periods. Egg laying occurs for 8-10 weeks following emergence from the soil, and larval invasion of the soil begins 2-3 weeks following adult emergence. It is critical to have the Bifenture EC soil barrier in place before the neonates drop.</p>	1	<p>Do not apply through irrigation systems.</p> <p>Do not allow Bifenture EC to contact fruit or foliage.</p> <p>Do not apply more than 0.50 lb a.i. (32 fl. oz. of product) per acre per season.</p> <p>Do not apply by air.</p>
Asian Cockroach	0.1-0.25 lb ai (6.4-16 fl oz)	Use Bifenture EC in conjunction with other tools in an integrated pest		

PEST	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
( <i>Blattella asahinae</i> ) Fireants ( <i>Solenopsis spp.</i> )	product)	management program for citrus Root Weevils. Good cultural practices, biological control of larvae and foliar control of adults are all important. Local university extension personnel can provide the most current information to protect citrus trees. <b>Additional information:</b> Apply to individual citrus resets, when not in solid planted rows, using a hand-gun or shielded sprayer. Note that although peak emergence of <i>Diaprepes</i> occurs in the spring, weather conditions can cause a minor emergence of this pest in the fall. Use the highest rate if the citrus grove to be treated is in an area where weather conditions are conducive to primary emergence in the spring. This will provide the longest residual management of <i>Diaprepes</i> Root Weevil. Use the lower rate if the citrus grove is in an area where weather conditions will promote more than one peak of pest emergence, and make a second application later in the season.		

### CONIFER SEED ORCHARDS

For use only in the states of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, Oklahoma, South Carolina, Tennessee, Texas, and Virginia

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	RESTRICTIONS
Brown marmorated stinkbug Cone Worms Seed Bugs Seed Worms	0.1-0.2 lb ai (6.4-12.8 fl oz)	Apply in water in a minimum of 100-500 gallons/A by ground. Apply in water in a minimum of 10 gallons/A or in refined vegetable oil in a minimum of 0.5 gallons/A by air. For best control thorough coverage is necessary. Begin application 7 days following peak pollen flight and repeat at 30 day intervals to a maximum of 0.6 lb ai/A per season.	Do not make more than 6 applications per season, or apply more than 0.60 lb ai (38.4 fl oz product) per acre per season.

### COTTON

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
European Corn Borer Soybean (Banded) Thrips Tobacco Thrips	0.02-0.10 lb. ai (1.3-6.4 fl. oz. product)	Apply Bifenture EC in water or refined soybean/cottonseed oil.  Apply in water in a minimum of 5 gallons/A by ground or a minimum of 1 gallon/A by air. Substitute 1 quart of emulsified oil for 1 quart water if desired when applying by air. <b>ULV Application:</b> Apply in refined vegetable oil in a minimum of 1 quart/A with aircraft calibrated to give adequate coverage.	14	Apply no more than 0.5 lb. a.i. (32 fl. oz of product) per acre per season in all states except California. In California, apply no more than 0.3 lb a.i. (19.2 fl. oz. of product) per acre per season. No more than 10 synthetic pyrethroid applications (of one product or combination of products, including Ambush®, Ammo®, Asana® XL, Baythroid®, Capture®, Danitol®, Karate®, Mustang®, and Scout X-TRA®) may be made to a cotton crop in one growing season.
Boll Weevil Bollworm Cabbage Looper Cotton Aphid Cotton Fleahopper Cotton Leafperforator Cutworms Fall Armyworm Plant Bugs Saltmarsh Caterpillar Southern Garden Leafhopper Stink Bugs Tobacco Budworm Whitefly Yellow Striped Armyworm	0.04-0.10 lb. ai (2.6-6.4 fl. oz. product)	<b>Boll Weevil:</b> Apply Bifenture EC every 3 to 4 days until control is acceptable. <b>Mites and Aphids:</b> Apply when pests first appear. Repeat as necessary to maintain control. Use the higher rates once a damaging threshold is established.		Do not graze livestock in treated areas or cut treated crops for feed. For control of brown marmorated stinkbugs, do not make more than 6 applications per season, or apply more than 38.4 fl. oz product per acre per season.
Beet Armyworm Carmine Spider Mite Lygus spp. Pink Bollworm Twospotted Spider Mite	0.06-0.10 lb. ai (3.8-6.4 fl. oz. product)			
Kudzu bug	0.1 lb. ai 0.2 (6.4 fl. oz product)	Apply Bifenture EC in a minimum of 5 gallons/A of water by ground or 1 gallon/A by air. Do not apply more than 0.5 lb. ai (32 fl oz. of product) per acre per season. Use an intensive scouting program for appropriate application timing. Repeat applications may be necessary for control. Do not graze livestock in treated areas or cut treated crops for feed.		



PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Brown marmorated stinkbug	0.1 lb ai (6.4 fl. oz product)	Apply no more than 0.5 lb ai (32 fl. oz product) per acre per season in all states except California. In California, apply no more than 0.3 lb. ai per acre per season.		

**FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED  
(AT PLANTING USE)**

PESTS CONTROLLED	RATE BIFENTURE EC	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Corn Rootworm Larvae Northern Mexican Southern Western	0.0046 lb ai (0.30 fl. oz. product) per 1,000 linear feet of row	Apply as a 5 to 7 inch T-band at planting over the open seed furrow. Position the spray nozzle behind the planter shoe, in front of the press wheel centered over the row. The table below describes the amount of Bifenture EC needed per acre. Apply in water in a minimum of 3 gallons/A.  When using Bifenture EC with fertilizers, check to be sure all components are compatible. For mixture with water or fertilizer, use the following procedure.	30	Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.  Do not apply more than 0.1 lb. ai (6.4 fl. oz. of product) per acre per season at planting.
Army Cutworm Cutworm Species Grubs Seed Corn Beetle Seed Corn Maggot True Armyworm or Armyworm Species Wireworm	0.0023 – 0.0046 lb ai (0.15 - 0.30 fl. oz. product) per 1,000 linear feet of row	Fill the spray tank approximately one-half full with water or liquid fertilizer; add the proper amount of Bifenture EC; then add the rest of the water or fertilizer. Sufficient agitation during mixing and application is required to ensure a uniform mixture  Only apply to soil when there is less than 30% cover of crop residue remaining.		

Row spacings	40 in.	38 in.	36 in.	30 in.
Bifenture EC (lb. a.i. per acre)	0.060	0.064	0.069	0.080
Bifenture EC (formulated product, ounces per acre)	3.9	4.1	4.4	5.12

**FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED**  
**Pre-Plant Incorporated (PPI) and Pre-Emergence (PRE)**

<b>PESTS CONTROLLED</b>	<b>RATE BIFENTURE EC</b>	<b>APPLICATION INSTRUCTIONS</b>
Armyworm spp. Black Cutworm Seedcorn Maggot Stalkborer White Grub Wireworm	0.047 to 0.062 lb. a.i./A (3-4 fl. oz./A product) Pre-Plant Incorporated (PPI)	Incorporate Bifenture EC close to the expected depth of the seed, but no deeper than 3 inches. PPI: Use the 3-4 oz./A rate only. Apply alone or with PPI herbicides as a tank mix.  PRE: Use the 2.56 oz./A rate when tank-mixing and applying with PRE herbicides.
Armyworm spp. Black Cutworm Stalkborer	0.040 lb. a.i./A (2.56 fl. oz./A product) Pre-emergence (PRE)	

**FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED  
(FOLIAR USE)**

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Aphids Army Cutworm Beet Armyworm Cereal Leaf Beetle Chinch Bug Common Stalk Borer Corn Earworm Corn Rootworm Adults Cucumber Beetle Adults Cutworm Species European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Greenbug Japanese Beetle Adults Leafhoppers Sap Beetle Southern Armyworm Southern Corn Leaf Beetle Southwestern Corn Borer Stinkbugs Tarnished Plant Bug Thrips True Armyworm or Armyworm Species Webworms Western Bean Cutworm Yellowstriped Armyworm	0.033-0.10 lb ai (2.1-6.4 fl. oz. product)	<p>Apply in water in a minimum of 10 gallons/A by ground or in a minimum of 2-5 gallons/A by air. For heavy infestations, use 5 gallons of finished spray per acre by aircraft. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired.</p> <p>For best control thorough coverage is necessary.</p> <p><b>Ear-Attacking Pests:</b> Apply Bifenture EC just before silking.</p> <p><b>Southwestern Corn Borer, European Corn Borer:</b> Apply at or shortly before egg hatch.</p> <p><b>Other Insect Pests:</b> Apply when insects first appear. Repeat as needed.</p> <p><b>Banks Grass Mites:</b> Apply when colonies first form before leaf damage or discoloration and prior to movement above the bottom third of the plant.</p> <p><b>Twospotted Spider Mite and Carmine Mite:</b> Apply when colonies first form before leaf damage or discoloration and before wide-spread mite movement throughout the canopy. Use the higher rates if heavier insect pressure is noted and corn is under heat or drought stress. Tank mixtures with dimethoate at 0.5 lb. a.i. per acre are effective under these conditions.</p> <p><b>Mite Control in Texas, New Mexico, Oklahoma, and Arizona:</b> Apply in water in a minimum of 10 gallons/A ground or in a minimum of 5 gallons/A by air. Repeat applications as necessary to maintain control.</p>	30	<p>Do not graze livestock in treated areas or cut treated crops for feed within 30 days of the last application.</p> <p>Do not apply by ultra low volume (ULV) application on corn.</p> <p>If heavy rainfall is imminent, do not make aerial or ground applications to corn.</p> <p><b>For Mite Control in Texas, New Mexico, Oklahoma, and Arizona:</b> Do not apply more than 0.3 lb. a.i. (19.2 fl. oz of product) per acre per season including PRE &amp; PPI, at plant plus foliar applications.</p>
Banks Grass Mite Carmine Mite Twospotted Spider Mite	0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)			
Brown marmorated	0.1 lb ai			Do not apply

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
stinkbug	(6.4 fl. oz product)			<p>more than 0.3 lb ai (19.2 fl. oz product) per acre per season, including all methods of application.</p> <p>Do not apply within 30 days of harvest.</p> <p>Do not graze livestock in treated areas or cut treated crops for feed within 30 days of the last application.</p>

**SWEET CORN  
SWEET CORN GROWN FOR SEED  
(AT PLANTING USE)**

PESTS CONTROLLED	RATE BIFENTURE EC	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Corn Rootworm Larvae Northern Mexican Southern Western	0.0046 lb. ai (0.30 fl.oz. product) per 1,000 linear feet of row	Apply at planting over the open seed furrow. Position the spray nozzle behind the planter shoe, in front of the press wheel centered over the row. The table below describes the amount of Bifenture EC needed per acre. Apply in a minimum of 3 gallons of finished spray per acre.  When using Bifenthrin EC with fertilizers, check to be sure all components	30	Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.  Do not apply more than 0.1 lb. ai (6.4 fl. oz. of product) per acre per season.
Army Cutworm Cutworm Species Grubs Seed Corn Beetle Seed Corn Maggot True Armyworm or Armyworm Species Wireworm	0.0023 – 0.0046 lb. ai (0.15 - 0.30 fl.oz. product) per 1,000 linear feet of row	are compatible. For mixture with water or fertilizer, use the following procedure. Fill the spray tank approximately one-half full with water or liquid fertilizer; add the proper amount of Bifenture EC; then add the rest of the water or fertilizer. Sufficient agitation during mixing and application is required to ensure a uniform mixture.  Only apply to soil where there is less than 30% cover of crop residue remaining.		

Row Spacings	40 in.	38 in.	36 in.	30 in.
Bifenture EC (lb. a.i. per acre)	0.060	0.064	0.069	0.080
Bifenture EC (formulated product, ounces per acre)	3.9	4.1	4.4	5.12

**SWEET CORN  
SWEET CORN GROWN FOR SEED  
(FOLIAR USE)**

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Aphids Army Cutworm Aster Leafhopper Beet Armyworm Cereal Leaf Beetle Chinch Bug Common Stalk Borer Corn Earworm Corn Rootworm Adults Corn Silkworm Cucumber Beetle Adults Cutworm Species European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Greenbug Japanese Beetle Adults Leafhoppers Sap Beetle Southern Armyworm Southern Corn Leaf Beetle Southwestern Corn Borer Stinkbugs Tarnished Plant Bug Thrips True Armyworm or Armyworm Species Webworms Western Bean Cutworm Yellowstriped Armyworm	0.033-0.10 lb. ai (2.1-6.4 fl. oz. product)	<p>Apply in water in a minimum of 10 gallons/A by ground or in a minimum of 2 gallons/A by air. For heavy infestations by aircraft, use 5 gallons of finished spray per acre. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired.</p> <p>For best control, thorough coverage is necessary.</p> <p><b>Ear-Attacking Pests:</b> Apply Bifenture EC just before silking.</p> <p><b>Southwestern Corn Borer, European Corn Borer:</b> Apply twice, with the first application at or shortly before egg hatch.</p> <p><b>Other Insect Pests:</b> Apply when insects first appear. Repeat as needed.</p> <p><b>Mite Control:</b> Apply when colonies first form before leaf damage or discoloration and prior to widespread movement throughout the canopy. For Banks Grass Mite, apply prior to movement above the bottom third of the plant.</p> <p>Use the higher rates if heavier insect pressure is noted and corn is under heat or drought stress.</p> <p>Repeat applications as necessary.</p>	1	<p>Do not apply more than 0.2 lb. a.i. (12.8 fl. oz. product) per acre per season.</p> <p>Do not graze livestock in treated areas or cut treated crops for feed within 1 day of the last application.</p> <p>Do not apply by ultra low volume (ULV) on corn.</p> <p>If heavy rainfall is imminent, do not make aerial or ground applications to corn.</p>
Banks Grass Mite Carmine Mite Pacific Spider Mite	0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)			

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Twospotted Spider Mite				
Brown marmorated stinkbug	0.10 lb ai (6.4 fl. oz product)			Do not apply more than 0.2 lb ai (12.8 fl. oz product) per acre per season. Do not graze livestock in treated ares or cut treated crops for feed within 1 day of the last application.



### CUCURBITS

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Chayote (fruit) Chinese waxgourd (Chinese preserving melon) Citron melon Cucumber Gherkin Gourd, edible (includes hyloan, cucuzza), ( <i>Luffa</i> spp.) (includes hechima, Chinese okra), ( <i>Momordica</i> spp.) (includes balsam apple, balsam pear, bitter melon, Chinese cucumber) Muskmelon (hybrids and/or cultivars of <i>Cucumis melo</i> ) (includes true cantaloupe, Cantaloupe, casaba, crenshaw melon, golden, pershaw melon, honeydew melon, honey balls, mango melon, Persian melon, pineapple)	Aphids Armyworms Cabbage Looper Corn Earworm Cucumber Beetles Cutworm Grasshopper Leafhoppers Melonworm Pickleworm Plant Bug Rindworm Squash Bugs Squash Vine Borer Stink Bugs Tobacco Budworm	0.04-0.10 lb. ai (2.6-6.4 fl. oz. product)	Apply in water in a minimum of 20 gallons/A by ground or in a minimum of 5 gallons/A by air. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control thorough coverage is necessary.	3	Do not apply more than 0.3 lb. ai (19.2 fl. oz. product) per acre per season.  Do not apply more than twice after bloom. Do not make applications less than 7 days apart.
	Banks Grass Mite Carmine Mite Lygus spp Twospotted Spider Mite Whitefly	0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)			

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
melon, Santa Claus melon, and snake melon) Pumpkin ( <i>Cucurbita spp.</i> ) Squash, summer (includes crookneck squash, scallop squash, straightneck squash, vegetable marrow, zucchini) Squash, winter (includes butternut squash, calabaza, hubbard squash ( <i>C. mixta</i> ; <i>C. pepo</i> ), includes acorn squash, spaghetti squash) Watermelon (includes hybrids and or varieties of <i>Citrullis spp.</i> )					
	Brown marmorated stinkbug	0.10 lb ai (6.4 fl. oz product)			

## FRUITING VEGETABLES

Eggplant, bell and non-bell pepper, pepino, groundcherry, tomato, tomatillo

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Eggplant Pepper (bell and non- bell) Pepino Groundcherry	Armyworms (including: Beet Armyworm, Fall Armyworm, Southern Yellowstriped Armyworm) Cabbage Looper Colorado Potato Beetle Corn Earworm Cucumber Beetle Cutworms European Corn Borer Flea Beetle Leafhoppers Leafminers Loopers Pepper Weevil Plant Bug Stink Bug Thrips Tomato Pinworm Tomato Hornworm Vegetable Leafminer Whitefly	0.033-0.10 lb. ai (2.1-6.4 fl. oz. product)	Apply in at least 2 gallons finished spray per acre by air or at least 10 gallons per acre by ground. When application is made by air, 1-2 qts emulsified oil may replace 1-2 qts of water in the finished spray. For best control thorough coverage is necessary.	7	Do not make applications less than 7 days apart.  Do not apply more than 0.2 lb. ai (12.8 fl. oz. product) per acre per season.
	Banks Grass Mite Broad Mite Carmin Mite Lygus spp. Pacific Spider Mite Twospotted Spider Mite	0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)			
	Brown marmorated stinkbug	0.10 lb ai (6.4 fl. oz. product)			

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Tomato Tomatillo	Aphids Armyworms (including: Beet Armyworm, Fall Armyworm, Southern Yellowstriped Armyworm) Bean Leaf Beetle Cabbageworm Carmin Mite Cloverworm Corn Earworm Corn Rootworm Cucumber Beetle Cutworms Diamondback Moth European Corn Borer Flea Beetle Fleahopper Grasshopper Japanese Beetle (adult) Leafhoppers Loopers Lygus spp. Melonworm Pea Weevil Pea Leaf Weevil Pickleworm Plant Bug Rindworm Salt Marsh Caterpillar Sap Beetle Seedpod Weevil Squash Bugs Stink Bug spp. Tobacco Budworm Tarnished Plant Bug Thrips Whitefly	0.033-0.08 lb. ai (2.1-5.2 fl. oz. product)	Apply in at least 3 gallons finished spray/A by air or at least 15 gallons/A by ground. For best control thorough coverage is necessary.	1	Do not make applications less than 7 days apart.  Do not make more than 4 applications per season.
	Two Spotted Spider Mite	0.08-0.10 lb ai (5.12-6.4 fl. oz product)			
	Brown marmorated stinkbug	0.08 lb ai (5.2 fl. oz product)			

## GRAPES

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Cutworms Eastern Grape Lady Beetle ( <i>Scymnus</i> ) Leafhopper Grape Berry Moth Japanese Beetle (adult) Variegated Leafhopper Western Grape Leafhopper	0.05-0.10 lb. ai (3.2 - 6.4 fl. oz. product)	Apply in a minimum of 25 gallons/A by ground or in a minimum of 10 gallons/A by air.  Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control thorough coverage is necessary.  Use the higher rate when insect pressure is moderate to severe.	30	Do not apply more than 0.10 lb. ai (6.4 fl. oz. of product) per acre per season.
Black Vine Weevil Glassywinged Sharpshooter Twospotted Spider Mite Brown marmorated stinkbug	0.10 lb. ai (6.4 fl. oz. product)			

### HOPS

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Aphids Armyworms Cutworms Leafrollers Loopers	0.06-0.1 lb. ai (3.8-6.4 fl. oz. product)	<p><b>By ground:</b> Full coverage is necessary for best results. For early season, use 100-150 gallons of spray per acre. For late season, use 200-250 gallons of spray per acre.</p> <p><b>Root Weevil:</b> direct the spray to the base of the plant. Spray 3 feet up the vine and the soil surface 1.5 to 2 feet around the plant.</p> <p><b>Twospotted spider mites, for late season control:</b> Apply at least 6.4 fl. oz. (0.1 lb. ai) per application in a minimum of 10 gallons per acre by air.</p>	14	<p>Do not apply more than 0.1 lb. ai (6.4 fl. oz. of product) per acre <b>per application</b>. Do not apply more than 0.3 lb. ai (19.2 fl. oz of product) per acre <b>per season</b>.</p> <p>Do not make applications less than 21 days apart.</p> <p>Do not apply by ultra low volume (ULV) application to hops.</p>
Root Weevils	0.05-0.1 lb. ai (3.2-6.4 fl. oz. product)			
Twospotted Spider Mite	0.1 lb. ai (6.4 fl. oz. product)			
Brown marmorated stinkbug	0.1 lb ai (6.4 fl. oz product)			<p>Do not apply more than 0.1 lb ai (6.4 fl oz product) per acre per application. Do not apply more than 0.3 lb ai (19.2 fl. oz product) per acre per season. Do not make applications less than 21 days apart.</p>

### LEAFY BRASSICAS Crop Subgroup 5-B

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Broccoli raab Chinese cabbage (bok choy) Collards Kale Mizuna Mustard Greens Mustard Spinach Rape Greens	Aphids Armyworms Corn Earworm Crickets Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Grasshoppers Ground Beetles Imported Cabbageworm Japanese Beetles (adults) Leafhoppers Loopers Saltmarsh Caterpillar Stink Bugs Thrips Tobacco Budworm Whitefly Wireworm (adults)	0.033-0.10 lb. ai (2.1-6.4 fl. oz. product)	Apply in water in a minimum of 10 gallons/A by ground or in a minimum of 2 gallons/A by air. For best control thorough coverage of foliage is necessary. When applied by air, 1 to 2 quarts of emulsified oil may be substituted for 1 to 2 quarts of water in the finished spray.	7	Do not make applications less than 7 days apart. Do not apply more than 0.4 lb. ai (25.6 fl. oz. of product) per acre per season.
	Banks Grass Mite Carmine Mite Lygus spp. Pacific Spider Mite Twospotted Spider Mite	0.08 - 0.10 lb. ai (5.12 - 6.4 fl. oz. product)			
	Brown marmorated stinkbug	0.1 lb ai (6.4 fl. oz product)			

# LETTUCE, HEAD

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Aphids Armyworms Cabbage Maggot Corn Earworm Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Grasshoppers Imported Cabbageworm Leafhoppers Loopers Salt Marsh Caterpillar Stink Bug spp. Thrips Tobacco Budworm Whitefly	0.033-0.10 lb. ai (2.1-6.4 fl. oz. product)	Apply in water in a minimum of 15 gallons/A by ground or in 5 gallons/A by air. For air application, substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control thorough coverage is necessary.	7	Do not make applications less than 7 days apart.  Do not apply more than 0.5 lb. ai (32 fl. oz. of product) per acre per season.
Carmine Mite Lygus, spp. Twospotted Spider Mite	0.08-0.10 lb. ai (5.12-6.4 fl. oz. product)			
Brown marmorated stinkbug	0.1 lb ai (6.4 fl. oz product)			



### MAYHAW

**Not for this use in California unless accompanied by supplemental labeling.**

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Plum Curculio	0.08 – 0.10 lb. ai (5.12 – 6.4 fl. oz. product)	Apply in at least 28 gallons per acre.	30	Do not apply more than 0.2 lb. ai (12.8 fl. oz of product) per acre per season. Do not apply more than once every 7 days.
Brown marmorated stinkbug	0.1 lb ai (6.4 fl. oz product)			

### OKRA

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Aphids Armyworms Corn Earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Japanese Beetles (adult) Leafminers Loopers Stink Bugs Thrips Whitefly	0.033 - 0.10 lb. ai (2.1 - 6.4 fl. oz. product)	For best control, thorough coverage is necessary. Apply as needed.  Apply in water in a minimum of 10 gallons of spray/A by ground or in a minimum of 2 gallons/A by air.	7	Do not make applications less than 7 days apart. Do not apply more than 0.20 lb. ai (12.8 fl. oz of product) per acre per season.
Broad Mite Carmine Mite Lygus spp. Two Spotted Spider Mite	0.08 – 0.10 lb. ai (5.12 – 6.4 fl. oz. product)			
Brown marmorated stinkbug	0.1 lb ai (6.4 fl. oz product)			

## PEANUT

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Beet Armyworm Corn Earworm Cutworm spp. Fall Armyworm Grasshoppers Green Cloverworm Leafhoppers Lesser Cornstalk Borer Loopers Red-necked Peanut Worm Southern Armyworm Southern corn Rootworm Stink Bugs Three-cornered Alfalfa Hopper Velvetbean Caterpillar Yellowstriped Armyworm	0.033 - 0.10 lb. ai (2.1 – 6.4 fl. oz. product)	Apply in at least 10 gallons of water.	14	Do not feed green immature plants and peanut hay to livestock.  Do not apply more than 0.5 lb. ai (32 fl. oz of product) per season. Do not apply more than once every 14 days.
Aphids Spider Mites Thrips Whitefly	0.08 – 0.10 lb. ai (5.12 – 6.4 fl. oz. product)			
Brown marmorated stinkbug	0.10 lb (6.4 fl.oz product)			

# PEARS

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Aphids Codling Moth Cutworms Green Fruitworm Leafhoppers Leafminers Leafrollers Lygus spp. Plant Bugs Plum Curculio San Jose Scale (Crawlers) Stink Bugs Tarnished Plant Bugs	0.04-0.2 lb. ai (2.6 - 12.8 fl. oz. product)	<b>By ground:</b> Apply as a dilute (minimum of 200 gallons of finished spray per acre) or concentrate (minimum of 50 gallons of finished spray per acre) spray. For best control thorough coverage is necessary.  <b>By air:</b> Apply in a minimum of 10 gallons per acre.  Apply as necessary to maintain control and repeat applications at 30 day intervals.	14	Do not apply more than 0.5 lb. ai (32 fl. oz of product) acre per season with no more than 0.45 lb. ai (28.8 fl. oz of product) per acre applied after petal fall. Do not graze livestock in treated orchards or cut treated cover crops for feed.
Twospotted Spider Mite Yellow Mite	0.06-0.2 lb. ai (3.8 -12.8 fl. oz. product)			
European Red Mite	0.08-0.2 lb. ai (5.12 - 12.8 fl. oz. product)			
Brown marmorated stink bug	0.08 lb ai (5.12 fl oz product)			

# ROOT CROPS (except Sugarbeets)

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Edible burdock, Carrot, Celeriac, Chervil, Chicory, Ginseng, Horseradish, Parsley, Parsnip, Radish, Oriental radish, Rutabaga, Salsify, Black salsify, Spanish salsify, Skirret, Turnip	Aphids Beet Armyworm Celery Leaf Tier Corn Earworm Cross-striped Cabbageworm Cutworms Diamondback Moth European Corn Borer Fall Armyworm Fire Ants Flea Beetles Green Cloverworm Hornworms Imported Cabbageworm Loopers Southern Armyworm Spider Mites Tobacco Budworm Velvetbean Caterpillar Whitefly Yellowstriped Armyworm	0.08 – 0.10 lb. ai (5.12 – 6.4 fl. oz. product)	Apply in at least 25 gallons per acre by ground.	21	Do not apply more than once every 7 days.  Do not apply more than 0.5 lb. ai (32 fl. oz of product) per acre per season.
	Brown marmorated stinkbug	0.1 lb ai (6.4 fl. oz product)			
Garden Beets	Aphids Fire Ants Flea Beetles Lepidopterous Larvae Spider Mites Whitefly	0.08-0.10 lb ai (5.12-6.4 fl. oz. product)	Make foliar applications in a minimum of 25 gal/A.	1	Do not apply more than 0.4 lb ai (25.6 fl. oz of product) per acre per season. Do not apply more often than every 7 days.

## SOYBEAN

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Alfalfa Caterpillar Aphids Aster Leafhopper Bean Leaf Beetle Beet Armyworm* Cloverworm Corn Earworm Corn Rootworm Adult Cucumber Beetles Cutworms European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Imported Cabbageworm Japanese Beetle Adult Pea Leaf Weevil Pea Weevil Plant Bug Saltmarsh Caterpillar Sap Beetle Southern Armyworm Stink Bugs Tarnished Plant Bug Thrips Tobacco Budworm* Webworms Western Bean Cutworm Whitefly Yellowstriped Armyworm Soybean Aphid	0.033 - 0.10 lb. ai (2.1 – 6.4 fl. oz. product)	<p>Make foliar applications in at least 10 gallons per acre.</p> <p>*Because pyrethroid resistance is common for Beet Armyworm and Tobacco Budworm, consult your local or state agricultural authorities to find out if resistant pest populations are in the treatment area. If so, refer to the resistance information in the Directions for Use section of this label.</p>	18	Do not apply more than once every 30 days. Do not apply more than 0.3 lb. ai (19.2 fl. oz of product) per acre per season.
Lygus spp. Whitefly Two-spotted Spider Mite	0.08 – 0.10 lb. ai (5.12 – 6.4 fl. oz. product)			
Kudzu bug Brown marmorated stinkbug	0.1 lb ai (6.4 fl. oz. product)			

# SPINACH

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Armyworms Colorado Potato Beetle Corn Earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Leafminers Loopers Pepper Weevil Tomato Pinworm Tomato Hornworm Thrips Whitefly	0.033 to 0.10 lb. ai (2.1-6.4 fl. oz. product)	Apply in water at 10-50 gallons/A by ground or 5-50 gallons /A by air.  <b>Whiteflies:</b> make up to 4 foliar treatments of Bifenture EC by ground or air at rates of up to 6.4 fl. oz.. (0.1 lb. ai) per acre Repeat applications at 7 day intervals. <b>Fire ants:</b> make up to 4 applications of Bifenture EC to the soil at planting or as a foliar treatment by ground or air at rates of up to 6.4 fl. oz. (0.1 lb. ai) per acre. Repeat application at 7 day intervals.	40	Do not make applications less than 7 days apart. Do not apply more than 0.4 lb. a.i. (25.6 fl. oz of product) per acre per season.
Broad Mite Banks Grass Mite Carmine Mite Fire Ants Lygus spp. Twospotted Spider Mite Pacific Spider Mite	0.08-0.10 lb. ai (5.12 to 6.4 fl. oz. product)			
Brown marmorated stinkbug	0.1 lb ai (6.4 fl. oz product)			

## TOBACCO

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	RESTRICTIONS
Armyworm spp. Cutworm spp Mole Crickets Stalkborers Tobacco Flea Beetle (larvae) White Grubs Wireworms	0.0625-0.10 lb ai (4.0-6.4 fl. oz. product)	<b>Pre-transplant soil application:</b> Apply specified rate in a minimum of 10 gal/A. To control below-ground pests, use equipment which will incorporate the application into the top 4" of soil. <b>At-transplant water treatment application:</b> Apply specified rate in a water treatment volume of 10-200 gal/A.	Do not make more than 2 foliar applications per season. Do not apply later than layby.  Do not apply more than 0.2 lb ai (12.8 fl. oz of product) per acre per season.
Aphid spp. Armyworm spp. Chinch Bugs Cucumber Beetles Flea Beetle (Adults) Stink Bugs Japanese Beetles Grasshoppers Cutworm spp. Tarnished Plant Bugs Green Bugs Saltmarsh Caterpillar Thrips Tobacco Budworm* Tobacco Hornworm Whiteflies	0.04-0.10 lb ai (2.56-6.4 fl. oz. product)	<b>Foliar application:</b> Apply specified rate in a minimum of 10 gal/A up to and including layby. May be tank mixed with other herbicides registered for tobacco use.  *See Resistance section on this label for more information.	
Brown marmorated stinkbug Lygus spp. Spider Mites	0.1 lb ai (6.4 fl. oz. product)		

### TREE NUT CROPS

Almond, Beech nut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert (hazelnut), Hickory nut, Macadamia nut (bush nut), Pecan, Pistachio, Walnut (black and English)

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Black Pecan Aphid Codling Moth Filbert Worm Hickory Shuckworm Leaffooted Bugs Navel Orangeworm Oblique Banded Leafroller Peach Twig Borer Pecan Leaf Casebearer Pecan Nut Casebearer Pecan Phylloxera Plant Bugs Stink Bugs Walnut Aphid Yellow Pecan Aphid	0.05 – 0.20 lb ai (3.2 – 12.8 fl. oz. product)	<b>Ground Application:</b> Apply as a dilute (minimum of 200 gallons per acre) or concentrate (minimum of 50 gallons per acre) spray in sufficient water to provide thorough coverage. <b>Air Application:</b> Apply in a minimum of 10 gallons of finished spray per acre. Minimum Spray Intervals: Apply Bifenture EC as needed to maintain control.	Pecans: 21 Others: 7	Do not apply at intervals sooner than 15 days. Do not apply more than 0.20 lb ai (12.8 fl. oz. product) per acre per application. Do not apply more than 0.50 lb ai (32 fl. oz of product) per acre per season. Do not graze livestock in treated orchards or cut treated cover crops for feed.
European Red Mite Spider Mites	0.08 – 0.20 lb ai (5.1 – 12.8 fl. oz. product)			
Fire Ants Walnut Husk Fly	0.1 – 0.2 lb ai (6.4 – 12.8 fl. oz. product)			



### TUBEROUS AND CORM VEGETABLES (Crop Subgroup 1C)

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)	RESTRICTIONS
Potato Sweet Potato Arracacha Arrowroot Artichoke (Chinese and Jerusalem) Edible Canna Cassava (bitter and sweet) Chayote (root) Chufa Dasheen Ginger Leren Tanier Turmeric Yam Bean True Yam	Banded Cucumber Beetle Black Flea Beetle Corn Wireworm Cucumber Beetle Japanese Beetle Grubs June Beetle Rootworms Southern Potato Wireworm Sugarcane Beetle Sweetpotato Flea Beetle Sweetpotato Weevil Tobacco Wireworm Whitefringed Beetle White Grub	At-Plant 0.30 lb. ai (19.2 fl. oz. product)  At Cultivation or Lay-By 0.05 – 0.15 lb. ai (3.2 – 9.6 fl. oz. product)  Foliar 0.033 – 0.10 lb. ai (2.1 – 6.4 fl. oz. product)	Bifenture EC may be applied at planting time for the control of wireworms, rootworms and white grubs. Apply at the rate of 0.3 lb ai/A as a soil incorporated broadcast, directed bed spray or T-band spray into the planting furrow.  Bifenture EC may be applied as a cultivation or lay-by treatment for the control of wireworms, rootworms, and white grubs. Apply to the drill area and cover with soil utilizing cultivation equipment set to throw soil to the drill area. Apply as a banded spray over the row at a rate of 0.05 to 0.15 lb ai/A (3.2 to 9.5 fl. oz. product) in 10 gallons of spray per acre.  Bifenture EC may be applied as a foliar spray for the control of the adult life stages of flea beetles, click beetles (wireworms), cucumber beetles (rootworms), white fringed beetles, and May/June beetles (white grubs). Apply at a rate of 0.033 to 0.1 lb ai/A (2.1 to 6.4 fl. oz. product) in 10 gallons of spray by ground or 3 gallons of spray by air.	21	Do not make more than 2 foliar applications per season. Do not make applications less than 21 days apart. Do not apply more than 0.5 lb. ai (32 fl. oz of product) per acre per season, including soil application.
	Kudzu bug	0.1 lb. ai (6.4 fl. oz.)			
	Brown marmorated stinkbug	0.1 lb ai (6.4 fl. oz product)			

**For use on Grass Forage, Fodder, and Hay Group and Grass Grown for Seed,  
Pasture and Rangeland**

(including: bahiagrass, barnyardgrass, bentgrass, Bermudagrass, Kentucky bluegrass, big bluestem, smooth brome grass, buffalograss, reed canarygrass, centipedegrass, crabgrass, cupgrass, dallisgrass, sand dropseed, Kentucky fescue, meadow foxtail, eastern gramagrass, side-oats grama, guinea grass, Indian grass, Johnsongrass, lovegrass, napiergrass, oatgrass, orchardgrass, pangolagrass, paspalum, redtop, Italian ryegrass, St. Augustine grass, sprangletop, squirreltailgrass, stargrass, switchgrass, timothy, crested wheatgrass, wildrye grass and zoysis grass. Also included are sudangrass and sorghum forages and their hybrids).

**NOTE: Use on grasses is limited to the States of Idaho, Oregon, and Washington.**

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	RESTRICTIONS
Alfalfa Caterpillar Alfalfa Looper Alfalfa Weevil Blue Alfalfa Aphid <sup>1</sup> Cutworms Egyptian Alfalfa Weevil (larvae & adult) Flea Beetles Green Cloverworm Green Peach Aphid <sup>1</sup> Hornworms Meadow Spittlebug Pea Aphid <sup>1</sup> Potato Leafhopper Spotted Alfalfa Aphid <sup>1</sup> Threecornered Alfalfa Hopper Velvetbean Caterpillar Webworms	6.4 fl. oz/A (0.1 lb ai/A)	Apply as insects appear in sufficient volume of water to ensure thorough coverage of foliage.  Use higher specified rate for increased pest pressure or for increased residual pest control. Do not exceed maximum allowable rate.  Apply in a minimum of 2 gallons of finished spray per acre by aerial equipment or 10 gallons per acre by ground equipment.  Higher volumes of finished spray may improve insect control under higher temperatures, when foliage is dense and/or when insect pressure is high.  Applications may be made up to 30 days prior to harvest for forage and hay.  <sup>1</sup> Aphid control may be variable depending on species present and host-plant relationships.	Do not apply more than 0.2 lbs. ai per acre per season.  Do not make applications less than 14 days
Armyworm, southern Armyworm, true Armyworm, yellowstriped Ant Cereal Leaf Beetle Chinch Bug Cricket Grass Mealybug Grasshoppers Range Caterpillar Stink Bugs Armyworm, fall Black Grass Bug			
Hunting Bill Bug Plant Bug spp.			

## SOD FARMS

**Not for use in California unless accompanied by supplemental labeling.**

In New York State, this product may NOT be applied to any grass or turf area within 100 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).

In New York State, DO make a single repeat application of this product if there are signs of renewed insect activity, but not sooner than two weeks after the first application.

PEST	RATE BIFENTURE EC/ACRE	RATE BIFENTURE EC FL OZ/1000 SQ FT.
Armyworms <sup>1</sup> Cutworms <sup>1</sup> Sod Webworm <sup>1</sup>	0.03-0.05 lb ai (2.2-3.5 fl. oz. product)	0.05-0.08 fl. oz. product
Annual Bluegrass Weevil (Hyperodes) (Adult) <sup>2</sup> Banks Grass Mite <sup>6</sup> Billbugs (Adult) <sup>3</sup> Black Trufgrass Ataenius (Adult) <sup>4</sup> Crickets Earwigs Fleas (Adult) Grasshoppers Mealybugs Mites <sup>6</sup>	0.05-0.11 lb ai (3.5-7.0 fl. oz. product)	0.08-0.16 fl. oz. product
Ants Chinch Bugs <sup>5</sup> Fleas (Larvae) <sup>7</sup> Imported Fire Ants <sup>8</sup> Japanese Beetle (Adult) Mole Cricket (Adult) <sup>9</sup> Mole Cricket (Nymph) <sup>10</sup> Ticks <sup>11</sup>	0.11-0.21 lb ai (7.0-14.0 fl. oz. product)	0.16-0.32 fl. oz. product

### Footnotes

- Armyworms, Cutworms, and Sod Webworms: for best control, delay watering (irrigation) or mowing for 24 hours after application. Higher application rates (up to 0.32 fl oz pr 1000 sq ft) may be required if grass is being maintained at a mowing height of greater than 1" in periods of high pest pressure.
- Annual Bluegrass Weevil (Hyperodes) Adults: Time applications to control adult weevils as they leave their overwintering sites and move into grass. Generally, this movement begins when Forsythia is in full bloom and finishes when flowering dogwood is in full bloom. Your State Cooperative Extension Services can give more specific information regarding the timing of applications.
- Billbug Adults: Apply when adult billbugs are first seen during April and May. Consult degree day models to optimize application timing, and consult your State Cooperative Extension Service for information specific to your region. In temperate regions, apply in spring to also provide control of over-wintered chinch bugs.
- Black Turfgrass Ataenius Adults: Apply during May and July to control the first and second generations, respectively. Time the May application to coincide with the full bloom stage of Vanhoutte spiraea (*Spiraea vanhouttei*) and horse chestnut (*Aesculus hippocastanum*). Time the July application to coincide with the blooming of Rose of Sharon (*Hibiscus syriacus*).
- Chinch Bugs: irrigate the grass area before treatment to optimize penetration of the product to the base of grass plants and the thatch layer, where chinch bugs are found. If the thatch layer is excessive or if a relatively long mowing height is being maintained, use higher volume applications. Chinch Bugs are difficult to control in grasses and the higher labeled application rates may be necessary to control populations containing both nymphs and

- adults during the middle of the summer.
- 6 Mites: for best control of eriophyid mites, apply in combination with the labeled application rate of a surfactant. A second application timed five to seven days after the first may be necessary for acceptable control.
  - 7 Flea Larvae: These pests develop in the soil of shaded areas accessible to pets and other animals. When treating these areas, use a higher application volume to ensure the insecticide penetrates into the soil. Note: if the lawn area is being treated with this product at 0.10 fl oz/1000 sq ft for adult flea control, then the larval application rate may be achieved by increasing the application volume two-to four-fold.
  - 8 Imported Fire Ants: For best control, combine broadcast applications (to control foraging workers and newly mated fly-in queens) with mound drenches (to control existing colonies). If the soil is not moist, irrigate before application or use a high volume application. For broadcast treatments, use 0.32 fl oz/1000 sq ft. Treat mounds by diluting 0.05 fl oz Bifenture EC per gallon of water, and apply 1 to 2 gallons of finished spray per mound. Treat the mounds with enough force to break the apex and allow the solution to flow into the ant tunnels. Also treat a four-foot diameter circle around the mound. For best results, apply in cool weather (65 – 80° F) or in early morning or late evening hours.
  - 9 Mole Cricket Adults: Adult mole crickets are difficult to control because preferred grass areas are continuously invaded during the early spring. Apply as late in the day as possible, and water in with up to 0.5 inches of water immediately following treatment. If the soil is not moist, irrigate before application to bring the crickets closer to the soil surface and maximize exposure to the insecticide. In grass areas that receive pressure from adult mole crickets, treat at peak egg hatch to ensure control of subsequent nymph populations (see footnote 10).
  - 10 Mole Cricket Nymphs: In grass areas that receive intense pressure from adult mole crickets, treat immediately before peak egg hatch. Best control is achieved at that time because young nymphs are more susceptible to insecticides and they are located near the soil surface. To control larger, more damaging nymphs later in the year a higher application rate and more frequent applications may be necessary. Apply as late in the day as possible and water in with up to 0.5 inches of water immediately following treatment. If the soil is not moist, irrigate before application to bring the crickets closer to the soil surface and maximize exposure to the insecticide.
  - 11 Ticks (including ticks that may transmit Lyme Disease and Rocky Mountain Spotted Fever): Do not make spot applications, but treat the entire area where exposure to ticks may occur. When treating areas with dense ground cover or heavy leaf litter, use higher spray volumes. Note that ticks may be reintroduced from surrounding areas or on host animals and retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Limit repeat application to no more than once per seven days, and only if there are signs of renewed activity. Deer Ticks (*Ixodes* sp.): This pest has a complex life-cycle that ranges over a two-year period and involves four life stages. Apply in the late fall and/or early spring to control adult ticks (usually located on brush or grass above the soil surface), and in mid to late spring to control larvae and nymphs (found in the soil and leaf litter). American Dog Ticks: These ticks congregate along paths or roadways where humans are likely to be encountered. Apply as necessary from mid-spring to early fall to control larvae, nymphs, and adults.

**IMPORTANT INFORMATION  
READ BEFORE USING PRODUCT**

**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. To the extent with applicable law all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

To the extent consistent with applicable law, United Phosphorus, Inc. warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or United Phosphorus, Inc., and Buyer and User assume the risk of any such use. To the extent consistent with applicable law, UNITED PHOSPHORUS, INC. MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

To the extent consistent with applicable law, United Phosphorus, Inc. or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product and **THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF UNITED PHOSPHORUS, INC. AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF UNITED PHOSPHORUS, INC. OR SELLER, THE REPLACEMENT OF THE PRODUCT.**

United Phosphorus, Inc. and Seller offer this product, and Buyer and User accept it, subject to the foregoing conditions of sale and limitations of warranty and of liability, which may not be modified except by written agreement signed by the duly authorized representative of United Phosphorus, Inc.

Ammo, Capture, Mustang – trademarks of FMC Corporation  
Ambush, Karate – trademarks of a Syngenta Group Company.  
Asana – trademark of E.I. duPont de Nemours & Company  
Baythroid – trademark of Bayer  
Danitol – trademark of Sumitomo Chemical Company, Ltd.  
Scout Xtra – trademark of Hoechst Schering Agrevo S.A.

Rev. 05/14/2015



# Supplemental Label

## RESTRICTED USE PESTICIDE

Toxic to fish and aquatic organisms.

For retail sale to and use only by certified applicators, or persons under their direct supervision and only for those uses covered by the certified applicator's certification.

## BIFENTURE® EC AGRICULTURAL INSECTICIDE

EPA Reg. No. 70506-57

**NOTE:** Use on grasses is limited to the States of Idaho, Oregon, and Washington.

This supplemental label expires on December 31, 2018, and must not be used or distributed after this date.

For use on Grass Forage, Fodder, and Hay Group and Grass Grown for Seed, Pasture and Rangeland (including: bahiagrass, barnyardgrass, bentgrass, Bermudagrass, Kentucky bluegrass, big bluestem, smooth brome grass, buffalograss, reed canarygrass, centipedegrass, crabgrass, cupgrass, dallisgrass, sand dropseed, Kentucky fescue, meadow foxtail, eastern gamagrass, side-oats grama, guinea grass, Indian grass, Johnsongrass, lovegrass, napiergrass, oatgrass, orchardgrass, pangolagrass, paspalum, redtop, Italian ryegrass, St. Augustine grass, sprangletop, squirreltailgrass, stargrass, switchgrass, timothy, crested wheatgrass, wildrye grass and zoysis grass. Also included are sudangrass and sorghum forages and their hybrids).

### DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

The supplemental labeling and the entire BIFENTURE EC container label, EPA Registration Number 70506-57, must be in the possession of the user at the time of the application. Read the label affixed to the container for BIFENTURE EC before applying. Carefully follow all precautionary statements and applicable use directions. Use BIFENTURE EC according to this supplemental labeling is subject to the use precautions and limitations imposed by the label affixed to the container for BIFENTURE EC.

**ACCEPTED**

**05/15/2015**

Under the Federal Insecticide, Fungicide  
and Rodenticide Act as amended, for the  
pesticide registered under

EPA Reg. No. 70506-57

United Phosphorus, Inc.  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406  
1-800-438-6071



# Supplemental Label

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS
Alfalfa Caterpillar Alfalfa Looper Alfalfa Weevil Blue Alfalfa Aphid <sup>1</sup> Cutworms Egyptian Alfalfa Weevil (larvae & adult) Flea Beetles Green Cloverworm Green Peach Aphid <sup>1</sup> Hornworms Meadow Spittlebug Pea Aphid <sup>1</sup> Potato Leafhopper Spotted Alfalfa Aphid <sup>1</sup> Threecornered Alfalfa Hopper Velvetbean Caterpillar Webworms	6.4 fl. oz/A (0.1 lb ai/A)	<p>Apply as insects appear in sufficient volume of water to ensure thorough coverage of foliage.</p> <p>Use higher specified rate for increased pest pressure or for increased residual pest control. Do not exceed maximum allowable rate.</p> <p>Apply in a minimum of 2 gallons of finished spray per acre by aerial equipment or 10 gallons per acre by ground equipment.</p> <p>Higher volumes of finished spray may improve insect control under higher temperatures, when foliage is dense and/or when insect pressure is high.</p>
Armyworm, southern Armyworm, true Armyworm, yellowstriped Ant Cereal Leaf Beetle Chinch Bug Cricket Grass Mealybug Grasshoppers Range Caterpillar Stink Bugs Armyworm, fall Black Grass Bug		<p>Do not apply more than 0.2 lbs. active ingredient per acre per season.</p> <p>Do not make applications less than 14 days</p> <p>Applications may be made up to 30 days prior to harvest for forage and hay.</p>
Hunting Bill Bug Plant Bug spp.		<p><sup>1</sup>Aphid control may be variable depending on species present and host-plant relationships.</p>

Read the Limitation of Warranty and Liability on the container labeling before buying or using BIFENTURE EC. If terms are not acceptable, return the unopened package at once to Seller for full refund of purchase price paid. Otherwise, use by Buyer or any other User constitutes acceptance of the terms of the Limitation of Warranty and Liability on the container label.

Rev. 05/15/2015

United Phosphorus, Inc.  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406  
1-800-438-6071

## Rudick, Maggie

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**From:** Sherry Hutcheson <sherry.hutcheson@uniphos.com>  
**Sent:** Friday, May 15, 2015 11:42 AM  
**To:** Rudick, Maggie  
**Subject:** Re: Electronic Label Request - EPA Reg # 70506-57 Bifenture EC  
**Attachments:** 70506-57.20150515.Bifenture EC supplemental.pdf

Maggie,  
Sorry for the oversight. Attached is the Supplemental label with the correction.  
Sherry

Sherry Hutcheson  
Regulatory Affairs Manager  
UPI  
Office: 229-247-9041  
Mobile: 229-251-7134

On Fri, May 15, 2015 at 9:24 AM, Rudick, Maggie <[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)> wrote:

Sherry –

The Primary Brand Name for 70506-57 is BIFENTURE EC AGRICULTURAL INSECTICIDE. Please correct on your supplemental label. The master, supplemental, and our records all must match exactly.

Maggie

**From:** Sherry Hutcheson [mailto:[sherry.hutcheson@uniphos.com](mailto:sherry.hutcheson@uniphos.com)]  
**Sent:** Thursday, May 14, 2015 9:32 AM  
**To:** Rudick, Maggie  
**Subject:** Re: Electronic Label Request - EPA Reg # 70506-57 Bifenture EC

Here are the ones for Bifenture EC (I sent the Bifenture 10DF yesterday)

Sherry

Sherry Hutcheson  
Regulatory Affairs Manager



## Rudick, Maggie

---

**From:** Sherry Hutcheson <sherry.hutcheson@uniphos.com>  
**Sent:** Tuesday, May 12, 2015 5:20 PM  
**To:** Rudick, Maggie  
**Subject:** Re: Electronic Label Request - EPA Reg # 70506-57 Bifenture EC  
**Attachments:** 70506-57.20150505.Bifenture EC marked.pdf; 70506-57.20150512.Bifenture EC clean.pdf; 70506-57.20150512.Bifenture EC agency data matrix.pdf; 70506-57.20150512.Bifenture EC public data matrix.pdf

Maggie,  
Attached are the documents as requested.  
Best regards,  
Sherry

Sherry Hutcheson  
Regulatory Affairs Manager  
UPI  
Office: 229-247-9041  
Mobile: 229-251-7134

On Thu, May 7, 2015 at 5:24 PM, Rudick, Maggie <[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)> wrote:

Sherry –

There are a few line breaks which need to be removed. Additionally, you need to address product specific efficacy data on your data matrix. Efficacy data is not generic data. You can list it as Product Specific Efficacy Data –CITE ALL.

Please let me know if you have any questions!

Maggie Rudick  
U. S. Environmental Protection Agency  
Office of Pesticides Program  
Registration Division; Invertebrate & Vertebrate Branch I  
(703) 347-0257  
[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)

**From:** Sherry Hutcheson [mailto:[sherry.hutcheson@uniphos.com](mailto:sherry.hutcheson@uniphos.com)]  
**Sent:** Wednesday, May 06, 2015 10:42 AM  
**To:** Rudick, Maggie  
**Subject:** Re: Electronic Label Request - EPA Reg # 70506-227

Maggie,

Attached are the marked and clean copies for the 10DF label.

Sherry

Sherry Hutcheson

Regulatory Affairs Manager

UPI

Office: 229-247-9041

Mobile: 229-251-7134

On Wed, Apr 29, 2015 at 4:36 PM, Rudick, Maggie <[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)> wrote:

Sherry –

The reformatting is much more clear. I found a few very minor revisions – mostly some restrictions which were only listed in the application instructions section. Once we get these back, I'll make sure this is a quick turnaround.

Maggie Rudick  
U. S. Environmental Protection Agency  
Office of Pesticides Program  
Registration Division; Invertebrate & Vertebrate Branch I  
(703) 347-0257  
[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)

**From:** Sherry Hutcheson [mailto:[sherry.hutcheson@uniphos.com](mailto:sherry.hutcheson@uniphos.com)]  
**Sent:** Wednesday, April 15, 2015 5:57 PM  
**To:** Rudick, Maggie  
**Subject:** Re: Electronic Label Request - EPA Reg # 70506-227

Maggie,

Received and attached are the Bifenture 10DF labels with requested changes.

I am traveling tomorrow but hope to have the EC (57) labels to you as well.

Best regards,

Sherry

Sherry Hutcheson

Regulatory Affairs Manager

UPI

Office: 229-247-9041

Mobile: 229-251-7134

On Mon, Apr 13, 2015 at 11:52 AM, Rudick, Maggie <[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)> wrote:

Sherry –

Here are the labels for 70506-227 with your comments addressed. As for the comments on pages 5 and 10, I don't understand how maximum rates would not apply to in furrow applications.

The same revisions are needed for 70506-57 as well and these label should be reformatted.

Thank you and please let me know if you have any additional questions.

Maggie Rudick  
U. S. Environmental Protection Agency  
Office of Pesticides Program  
Registration Division; Invertebrate & Vertebrate Branch I  
(703) 347-0257  
Rudick.Maggie@epa.gov

**From:** Sherry Hutcheson [mailto:[sherry.hutcheson@uniphos.com](mailto:sherry.hutcheson@uniphos.com)]  
**Sent:** Monday, April 13, 2015 11:31 AM  
**To:** Rudick, Maggie  
**Subject:** Re: Electronic Label Request - EPA Reg # 70506-227

Maggie,

Did you send an attachment? If so, I didn't receive the message. Could be the file is too large. Try sending one at the time if that is the case.

Sherry

Sherry Hutcheson  
Regulatory Affairs Manager  
UPI  
Office: 229-247-9041  
Mobile: 229-251-7134

On Mon, Apr 13, 2015 at 11:21 AM, Rudick, Maggie <[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)> wrote:

Sherry –

This message kicked back, can you please confirm receipt?

Thanks!

Maggie

**From:** Rudick, Maggie  
**Sent:** Monday, April 13, 2015 11:05 AM  
**To:** 'Sherry Hutcheson'  
**Cc:** Davis, Kable  
**Subject:** RE: Electronic Label Request - EPA Reg # 70506-227

Sherry –

These labels will need to be reformatted accordingly. It is not clear which restrictions apply to each use and pest. Please let me know if you have any additional questions.

Thank you,

Maggie Rudick  
U. S. Environmental Protection Agency  
Office of Pesticides Program  
Registration Division; Invertebrate & Vertebrate Branch I  
(703) 347-0257  
[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)

**From:** Sherry Hutcheson [<mailto:sherry.hutcheson@uniphos.com>]  
**Sent:** Monday, March 30, 2015 12:02 PM  
**To:** Rudick, Maggie  
**Cc:** Davis, Kable  
**Subject:** Re: Electronic Label Request - EPA Reg # 70506-227

Maggie,

Here are the products (since this will apply to the liquid product as well)

**BRIGADE WSB INSECTICIDE/MITICIDE**

EPA Registration Number: 279-3108



Company Number: 279

**FMC CORP. AGRICULTURAL PRODUCTS GROUP**

**ATTN: MR. MICHAEL C. ZUCKER**

**1735 MARKET ST., RM 1978**

**PHILADELPHIA PA 19103**

**215/299-5876**

Approval Date: 06-01-1995

Product Manager: Richard Gebken (703)305-6701

Percent	Active Ingredient
10.0000	Bifenthrin (128825)

---

**BRIGADE 2EC INSECTICIDE/MITICIDE**

EPA Registration Number: 279-3313



Company Number: 279

**FMC CORP. AGRICULTURAL PRODUCTS GROUP**

**ATTN: MR. MICHAEL C. ZUCKER**

**1735 MARKET ST., RM 1978**

**PHILADELPHIA PA 19103**

**215/299-5876**

Approval Date: 04-24-2006

Product Manager: Richard Gebken (703)305-6701

Percent	Active Ingredient
25.1000	Bifenthrin (128825)

Sherry Hutcheson

Regulatory Affairs Manager

UPI

Office: 229-247-9041

Mobile: 229-251-7134

On Mon, Mar 30, 2015 at 11:49 AM, Rudick, Maggie <[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)> wrote:

Sherry –

Can you please send the Reg # for the FMC product. As for your question, yes, this is the direction we are moving for all the labels. I understand that many similar products list rates in a 'per season' fashion, this will be cleaned up during registration review, but we do require a maximum total use rate per year for the product based on our assessments.

Please let me know if you have any further questions.

Maggie Rudick  
U. S. Environmental Protection Agency  
Office of Pesticides Program  
Registration Division; Invertebrate & Vertebrate Branch I  
(703) 347-0257  
[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)

**From:** Sherry Hutcheson [mailto:[sherry.hutcheson@uniphos.com](mailto:sherry.hutcheson@uniphos.com)]  
**Sent:** Friday, March 27, 2015 10:40 AM  
**To:** Rudick, Maggie  
**Subject:** Re: Electronic Label Request - EPA Reg # 70506-227

Maggie,

I have had an opportunity to look through the label comments, and I need some clarification and hopeful some understanding on what is required for us to do.

From the looks of the comments, EPA wants the label reformatted at this time. This label is setup similar to the FMC approved label for Brigade WSB. You will note from their label under DIRECTIONS for each crop, the same information is listed as is on our label. Please advise if all registrants are going to be required to reformat their labels too at this time, or if this is something we can do at the next submission since this was just to add one new use site; hence the supplemental label.

Regarding your comment on Page 5, #4 - 'Do these restrictions apply to the grubs/maggots, wireworm application. These restrictions are only for the FOLIAR use which applies to aphids, etc. Which is why it is the row corresponding with those pests.

On page 10, comment #1, FMC's label is set up the same way. Please advise.

on page 16, comment #3, per acre per season. This is the same as FMC's label and the way that

Please advise.

Best regards,

Sherry

Sherry Hutcheson

Regulatory Affairs Manager

UPI

Office: 229-247-9041

Mobile: 229-251-7134

On Mon, Mar 16, 2015 at 5:29 PM, Rudick, Maggie <[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)> wrote:



Sherry –

Here are the revisions to be made to EPA Reg # 70506-227 (master and supplemental) labels. To summarize, minor formatting issues were requested along with clarification on per season/per year rate. We do not like to approve “per season” rates, but instead give the user a maximum use rate per year. A max yearly rate must be on your label. Additionally, throughout your directions for use, restrictions and precautions must be separated out.

Thank you!

Maggie Rudick  
U. S. Environmental Protection Agency  
Office of Pesticides Program  
Registration Division; Invertebrate & Vertebrate Branch I  
(703) 347-0257  
[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)

**From:** Sherry Hutcheson [<mailto:sherry.hutcheson@uniphos.com>]  
**Sent:** Friday, January 09, 2015 4:44 PM  
**To:** Rudick, Maggie  
**Subject:** Re: Electronic Label Request - EPA Reg # 70506-57, 70506-227

Maggie,

Attached are the pdf versions of the labels as requested.

Best regards,

Sherry

Sherry Hutcheson  
Regulatory Affairs Manager

United Phosphorus, Inc.

Office: 229-247-9041

Mobile: 229-251-7134

On Fri, Jan 9, 2015 at 2:36 PM, Rudick, Maggie <[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)> wrote:

Sherry –

Can you please emailed me PDF searchable versions of your proposed labeling for the label amendments sent in Dec 17/18 for EPA Reg # 70506-57 and 70506-227?

Thank you!

Maggie Rudick  
U. S. Environmental Protection Agency  
Office of Pesticides Program  
Registration Division; Invertebrate & Vertebrate Branch I  
(703) 347-0257  
[Rudick.Maggie@epa.gov](mailto:Rudick.Maggie@epa.gov)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
401 M Street, S.W.  
WASHINGTON, D.C. 20460

Form Approved OMB No. 2070-0060

**Paperwork Reduction Act Notice:** The public reporting burden for this collection of information is estimated to average 0.25 hours per response for registration activities and 0.25 hours per response for reregistration and special review activities, including time for reading the instruction and completing the necessary forms. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to: Director, OPPE Information Management Division (2137), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington DC 20460. Do not send the form to this address.

**DATA MATRIX**

Date: May 12, 2015

EPA Reg. No./ File Symbol  
70506-57

Page 1 of 4

Applicant's/Registrant's Name and Address:

United Phosphorus, Inc.  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406

Product: Bifenture EC Insecticide

Ingredient: Bifenthrin (PC 128825)

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
<b>PRODUCT SPECIFIC DATA</b>					
830.1550	Chemical Identity	46092701	United Phosphorus, Inc.	OWN	
830.1600	Starting Materials	46092701	United Phosphorus, Inc.	OWN	
830.1650	Description of Formulation Process	46092701	United Phosphorus, Inc.	OWN	
830.1670	Discussion of Formation of Impurities	46092701	United Phosphorus, Inc.	OWN	
830.1750	Certified Limits	46092701	United Phosphorus, Inc.	OWN	
830.1800	Enforcement Analytical Method	46092701	United Phosphorus, Inc.	OWN	
830.6302	Color	46092702	United Phosphorus, Inc.	OWN	
830.6303	Physical State	46092702	United Phosphorus, Inc.	OWN	
830.6304	Odor	46092702	United Phosphorus, Inc.	OWN	
830.6314	Oxidation/Reduction	46092702	United Phosphorus, Inc.	OWN	
830.6315	Flammability	46092702	United Phosphorus, Inc.	OWN	
830.6316	Explosibility	46092702	United Phosphorus, Inc.	OWN	
830.6317	Storage Stability	46092702	United Phosphorus, Inc.	OWN	
830.6319	Miscibility	46092702	United Phosphorus, Inc.	OWN	
830.6320	Corrosion Characteristics	46092702	United Phosphorus, Inc.	OWN	
830.6321	Dielectric Breakdown Voltage	46092702	United Phosphorus, Inc.	OWN	
830.7000	pH	46092702	United Phosphorus, Inc.	OWN	

Signature

Name and Title

Sherry B. Hutcheson/Regulatory Affairs Manager

Date

05/12/2015



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401 M Street, S.W.  
WASHINGTON, D.C. 20460

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DATA MATRIX

Date: May 12, 2015

EPA Reg. No./ File Symbol  
70506-57

Page 2 of 4

Applicant's/Registrant's Name and Address:  
United Phosphorus, Inc.  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406

Product: Bifenture EC Insecticide

Ingredient: Bifenthrin (PC 128825)

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
830.7300	Density/Relative Density/Bulk Density	46092702	United Phosphorus, Inc.	OWN	
870.1100	Acute Oral Toxicity	132527	FMC	OLD	
870.1200	Acute Dermal Toxicity	132528	FMC	OLD	
870.1300	Acute Inhalation Toxicity	144256	FMC	OLD	
870.2400	Eye Irritation	46183601	United Phosphorus, Inc.	OWN	
870.2500	Dermal Irritation	132529	FMC	OLD	
870.2600	Dermal Sensitization	132531	FMC	OLD	
GENERIC DATA					

Signature

Name and Title

Sherry B. Hutcheson/Regulatory Affairs Manager

Date

05/12/2015



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
401 M Street, S.W.  
WASHINGTON, D.C. 20460

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**DATA MATRIX**

Date: May 12, 2015

EPA Reg. No./ File Symbol  
70506-57

Page 3 of 4

Applicant's/Registrant's Name and Address:  
United Phosphorus, Inc.  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406

Product: Bifenture EC Insecticide

Ingredient: Bifenthrin (PC 128825)

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
		CITE ALL	Nufarm Americas, Inc., The Scotts Company, FMC Corp Agricultural Products Group, Bayer Environmental Science, BASF Corp., Lebanon Seaboard Corp., MGK Co., Fuller System, Inc., Winfield Solutions, LLC, Sergeants Pet Care Products, Inc., Aceto Agricultural Chemicals Corp., SC Johnson & Son, Inc., Amvac Chemical Corp., Helena Chemical, Co., Southern States Cooperative, Inc., Nippon Soda Co., Ltd., The Andersons Lawn Fertilizer Division, Sunniland Corp., Chemsico, Lesco, Inc., Makhteshim Chemical Works, Ltd., Loveland Products, Inc., Howard Fertilizer & Chemical Co., Inc., Albaugh Inc., BASF Sparks LLC, Control Solutions, Inc., Arizona Chemical Group, Inc., Valent USA Corp., Pyrethroid Working Group, Makhteshim Agan of North America, Inc., Arysta Lifescience North America, LLC, Spray Drift Task Force, Bengal Products, Inc., Outdoor Residential Exposure Task Force, Agricultural Reentry Task Force, Sapstain Industry Group, Non-Dietary Exposure Task Force, Univar Environmental Sciences, FIFRA Endangered Species Task Force, Residential Exposure Joint Venture, Atex Inc., Agricultural Handler Exposure Task Force, Osmose Utilities Services, Inc., Ensystex II, Inc., Direct Ag Source, LLC, Tacoma Ag, LLC, Ensystex IV, Inc., Tacoma Ag, LLC, Wet & Forget USA, Ltd., Generic Endangered Species Task Force, Kaizen Technologies, LLC, Bifenthrin Task Force Steering Comm., VIVE Crop Protection, Inc., Liberty Crop Protection, LLC	PAY	UPI holds memberships in the following: SDTF, ORETF, ARETF, AHETF, GESTF, and BTF.
<b>RESIDUE DATA</b>					
860.1340	MOR: Grasses	CITE-ALL	Same as above	PAY	

Signature

Name and Title

Sherry B. Hutcheson/Regulatory Affairs Manager

Date

05/12/2015



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
401 M Street, S.W.  
WASHINGTON, D.C. 20460

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**DATA MATRIX**

Date: May 12, 2015	EPA Reg. No./ File Symbol 70506-57	Page 4 of 4
Applicant's/Registrant's Name and Address: United Phosphorus, Inc. 630 Freedom Business Center, Suite 402 King of Prussia, PA 19406	Product: Bifenture EC Insecticide	
Ingredient: Bifenthrin (PC 128825)		

Guideline Reference Number	Guideline Study Name	MRID Number	Submitter	Status	Note
PRODUCT SPECIFIC EFFICACY DATA		CITE ALL	Same as above	PAY	

Signature 	Name and Title Sherry B. Hutcheson/Regulatory Affairs Manager	Date 05/12/2015
---------------	--	--------------------

<div style="display: inline-block; vertical-align: middle;"> <b>EPA</b>                  United States  <b>Environmental Protection Agency</b>                  Washington, DC 20460             </div>		<input type="checkbox"/> Registration <input checked="" type="checkbox"/> <b>Amendment (fast track)</b> <input type="checkbox"/> Other:	OPP Identifier Number
<b>Application for Pesticide - Section I</b>			
1. Company/Product Number 70506-57		2. EPA Product Manager Richard Gebken	
4. Company/Product (Name) Bifenture EC Agricultural Insecticide		3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted	
5. Name and Address of Applicant (Include ZIP Code) <b>United Phosphorus, Inc.</b> <b>630 Freedom Business Center, Ste. 402</b> <b>King of Prussia, PA 19406</b>  <input type="checkbox"/> Check if this is a new address		6. <b>Expedited Review.</b> In accordance with FIFRA Section 3(c)(3) (b)(I), my product is similar or identical in composition and labeling to: EPA Reg. No. <u>Brigade 2EC</u>  Product Name <u>279-3313</u>	
<b>Section - II</b>			
<input checked="" type="checkbox"/> Amendment - Explain below. <input type="checkbox"/> Final printed labels in response to Agency letter dated _____ <input type="checkbox"/> Resubmission in response to Agency letter dated _____ <input type="checkbox"/> "Me Too" Application <input type="checkbox"/> Notification - Explain below. <input type="checkbox"/> Other - Explain below			
<b>Explanation:</b> Use additional page(s) if necessary. (For Section I and Section II.) Fast track label amendment to add use for grasses.			
<b>Section - III</b>			
1. Material This Product Will Be Packaged In:			
Child-Resistant Packaging <input type="checkbox"/> Yes* <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No If "Yes"                      No. per Unit Packaging wgt.                      container	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No If "Yes"                      No. per Package wgt.                      container	2. Type of Container <input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify)
<b>*Certification must be submitted</b>			
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container	
		5. Location of Label Directions <input type="checkbox"/> On Label <input type="checkbox"/> On labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Other _____ <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			
<b>Section - IV</b>			
1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application)			
Name Sherry B. Hutcheson		Title Regulatory Affairs Manager	
		Telephone No. (Include Area Code) 229-247-9041	
<b>Certification</b> I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.			6. Date Application Received <b>(Stamped)</b>
2. Signature 		3. Title Regulatory Affairs Manager	
4. Typed Name Sherry B. Hutcheson		5. Date 12/17/2014	



**United Phosphorus, Inc.**

Sherry B. Hutcheson  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406  
Phone: (229) 247-9041

Document Processing Desk (AMEND)  
Office of Pesticide Programs (7504P)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

December 17, 2014

ATTENTION: Richard Gebken (PM 10)

**Subject: Label Amendment for Bifenture EC (EPA Reg. No. 70506-57)**

Dear Mr. Gebken,

United Phosphorus, Inc. (UPI) is submitting a label amendment for our product Bifenture EC (EPA Reg. No. 70506-57), containing bifenthrin as the active ingredient.

It is our intent to add use on grasses for the states of Idaho, Oregon and Washington. This use has already been approved and is on the Brigade 2EC (EPA Reg. No. 279-3313) label which is substantially similar to our product and label.

It is our intent to remove Washington and Oregon as the only states in which this product may be applied on Christmas trees. This is a carryover from an old approved special local needs (24 c) registration in those two states which was added when we registered the product. Christmas trees are grown in other states and bifenthrin products, including Bifenture EC are used by cooperative agencies in these additional states as a means to control pests. The use rate has been increased to match the maximum allowed use rate and is similar to that of another approved product. The rate is the same as other tree crops on the currently approved label. Per the provisions of PR Notice 98-10, we are adding additional pests to this use site.

In addition to this letter, we have included the following:

- An application form, EPA form 8570-1,
- Certificate with Respect to Data Citation, EPA form 8570-34,
- Data Matrix, Public Copy EPA form 8570-35
- Data Matrix, Agency Copy, EPA form 8570-35
- One copy of the label clearly marked
- Two clean copies of the proposed label (master label)
- Two clean copies of the proposed supplemental label





**United Phosphorus, Inc.**

Sherry B. Hutcheson  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406  
Phone: (229) 247-9041

All changes are highlighted in the marked copy of the label. We believe this qualifies for a fast-track amendment and since no data are being submitted, no PRIA fee is required.

If you have any questions or comments, please feel free to contact me at [sherry.hutcheson@uniphos.com](mailto:sherry.hutcheson@uniphos.com) or 229-247-9041.

Best regards,

A handwritten signature in black ink, appearing to read 'Sherry B. Hutcheson'.

Sherry B. Hutcheson  
Regulatory Affairs Manager



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**1200 Pennsylvania Avenue, N.W.**  
**WASHINGTON, D.C. 20460**

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**Certification with Respect to Citation of Data**

Applicant's/Registrant's Name, Address, and Telephone Number United Phosphorus, Inc., 630 Freedom Business Ctr, King of Prussia PA 19406 Tel: 229-247-9041	EPA Registration Number/File Symbol 70506-57
Active Ingredient(s) and/or representative test compound(s) Bifenthrin	Date December 17, 2014
General Use Pattern(s) (list all those claimed for this product using 40 CFR Part 158) terrestrial food crop	Product Name Bifenture EC Agricultural Insecticide

**NOTE:** If your product is a 100% repackaging of another purchased EPA-registered product labeled for all the same uses on your label, you do not need to submit this form. You must submit the Formulator's Exemption Statement (EPA Form 8570-27).

☐ I am responding to a Data-Call-In Notice, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).

**SECTION I: METHOD OF DATA SUPPORT** (Check one method only)

<input type="checkbox"/> I am using the cite-all method of support, and have included with this form a list of companies sent offers of compensation (the Data Matrix form should be used for this purpose).	<input checked="" type="checkbox"/> I am using the selective method of support (or cite-all option under the selective method), and have included with this form a completed list of data requirements (the Data Matrix form must be used).
--	---

**SECTION II: GENERAL OFFER TO PAY**

[Required if using the cite-all method or when using the cite-all option under the selective method to satisfy one or more data requirements]

☒ I hereby offer and agree to pay compensation, to other persons, with regard to the approval of this application, to the extent required by FIFRA.

**SECTION III: CERTIFICATION**

I certify that this application for registration, this form for reregistration, or this Data-Call-In response is supported by all data submitted or cited in the application for registration, the form for reregistration, or the Data-Call-In response. In addition, if the cite-all option or cite-all option under the selective method is indicated in Section I, this application is supported by all data in the Agency's files that (1) concern the properties or effects of this product or an identical or substantially similar product, or one or more of the ingredients in this product; and (2) is a type of data that would be required to be submitted under the data requirements in effect on the date of approval of this application if the application sought the initial registration of a product of identical or similar composition and uses.

I certify that for each exclusive use study cited in support of this registration or reregistration, that I am the original data submitter or that I have obtained the written permission of the original data submitter to cite that study.

I certify that for each study cited in support of this registration or reregistration that is not an exclusive use study, either: (a) I am the original data submitter; (b) I have obtained the permission of the original data submitter to use the study in support of this application; (c) all periods of eligibility for compensation have expired for the study; (d) the study is in the public literature; or (e) I have notified in writing the company that submitted the study and have offered (i) to pay compensation to the extent required by sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA; and (ii) to commence negotiations to determine the amount and terms of compensation, if any, to be paid for the use of the study.

I certify that in all instances where an offer of compensation is required, copies of all offers to pay compensation and evidence of their delivery in accordance with sections 3(c)(1)(F) and/or 3(c)(2)(B) of FIFRA are available and will be submitted to the Agency upon request. Should I fail to produce such evidence to the Agency upon request, I understand that the Agency may initiate action to deny, cancel or suspend the registration of my product in conformity with FIFRA.

I certify that the statements I have made on this form and all attachments to it are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

Signature 	Date 12/17/2014	Typed or Printed Name and Title Sherry B. Hutcheson/Regulatory Affairs Manager
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

January 28, 2014

Ms. Sherry B. Hutcheson  
Regulatory Affairs Manager  
United Phosphorus, Inc.  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406

Subject: Minor Formulation Amendment

Dear Ms. Hutcheson:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated 12/17/2013 for **EPA Registration 70506-57**. The Registration Division (RD) has conducted a review of the Confidential Statement of Formula (CSF) submitted with this request for its applicability under PRN 98-10 and finds that the change(s) requested falls within the scope of PRN 98-10. Therefore, the proposed new Alternate Formulation #4 CSF dated 12/16/2013, is **acceptable**. A copy of the CSF has been added to the registration file for the subject product.

Please note that any future label will require an indication that the product contains petroleum hydrocarbons.

If you have any questions, please contact me via telephone at 703-305-7990 or e-mail ([cutchin.william@epa.gov](mailto:cutchin.william@epa.gov)).

Sincerely,

William Cutchin  
Inert Ingredient Assessment Branch (IIAB)  
Registration Division (7505P)  
Office of Chemical Safety and Pollution Prevention



*MFA*  
*Due 2/6/11*

**United Phosphorus, Inc.**  
Sherry B. Hutcheson  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406  
Phone: (229) 247-9041  
Fax: (229) 241-9699

December 17, 2013

Attn: Minor Formulation Review Coordinator

Document Processing Desk (MFRC)  
Office of Pesticide Programs (7504P)  
US Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

**Subject: Minor Formulation Amendment per PR Notice 98-10 for Bifenture EC  
Agricultural Insecticide (EPA Reg. No. 70506-57)**

Dear Sir or Madam,

Please note this letter serves to provide a minor formulation amendment to our Bifenture EC Agricultural Insecticide (70506-57) registration. We believe this meets the criteria as described in PR Notice 98-10 for an accelerated review of minor formulation changes. The following are provided in support of this alternate formulation:

- One completed EPA form 8570-1, Application for Pesticide Registration,
- One copy of the alternate approved CSF dated May 9, 2012 (for reference)
- Two original copies of the alternate CSF, EPA form 8570-4, with attachments
- Supporting MSDS for the alternate inert ingredient, as required.

Please note this does not replace any formulation on file with EPA. This formulation has previously been reviewed and approved by EPA per the CSF dated May 9, 2012. The only change has been to add an alternate inert ingredient and to add an addendum for a listing of producers and additional country where this product can be formulated. No other changes have been made.

Should you require additional information or have questions concerning this submission, please contact me at 229-247-9041 or [sherry.hutcheson@uniphos.com](mailto:sherry.hutcheson@uniphos.com).

Sincerely,

A handwritten signature in black ink that reads "Sherry B. Hutcheson".

Sherry B. Hutcheson  
Regulatory Affairs Manager



**EPA**

United States  
**Environmental Protection Agency**  
Washington, DC 20460

- ☐ Registration  
☐ Amendment  
☒ **Other: Minor Formulation Amendment**

OPP Identifier Number

**Application for Pesticide - Section I**

1. Company/Product Number 70506-57	2. EPA Product Manager MFRC	3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Bifenture EC Agricultural Insecticide	PM#	
5. Name and Address of Applicant (Include ZIP Code) <b>United Phosphorus, Inc.</b> <b>630 Freedom Business Center, Ste. 402</b> <b>King of Prussia, PA 19406</b>	6. <b>Expedited Review.</b> In accordance with FIFRA Section 3(c)(3) (b)(I), my product is similar or identical in composition and labeling to: EPA Reg. No. _____ Product Name _____	
<input type="checkbox"/> Check if this is a new address		

**Section - II**

- ☒ Amendment -- Explain below. ☐ Final printed labels in response to Agency letter dated \_\_\_\_\_  
☐ Resubmission in response to Agency letter dated \_\_\_\_\_ ☐ "Me Too" Application  
☐ Notification - Explain below. ☐ Other - Explain below

**Explanation:** Use additional page(s) if necessary. (For Section I and Section II.)  
 Alternate CSF - Minor Formulation Amendment per PR Notice 98-10 for Bifenture EC Agricultural Insecticide (EPA Reg. No. 70506-57). This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 USC Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

**Section - III**

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify)		
* <b>Certification must be submitted</b>		If "Yes" Unit Packaging wgt. No. per container	If "Yes" Package wgt. No. per container		
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/> On Label <input type="checkbox"/> On labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled <input type="checkbox"/> Other _____					

**Section - IV**

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application)

Name Sherry B. Hutcheson	Title Regulatory Affairs Manager	Telephone No. (include Area Code) 229-247-9041
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**Certification**

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.

2. Signature 	3. Title Regulatory Affairs Manager
4. Typed Name Sherry B. Hutcheson	5. Date 12/16/13

6. Date Application Received  
(Stamped)



**United Phosphorus, Inc.**

Sherry B. Hutcheson  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406  
Phone: (229) 247-9041  
Fax: (229) 241-9699

Document Processing Desk (FPL)  
Office of Pesticide Programs (7504P)  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

July 12, 2013

ATTENTION: Richard Gebken (PM 10)

**Subject: Final Printed Label for Bifenture EC (EPA Reg. No. 70506-57)**

Dear Mr. Gebken,

United Phosphorus, Inc. (UPI) is submitting a final printed label for our product, Bifenture EC, EPA Reg. No. 70506-57. This is in response to the approval dated June 12, 2013.

In addition to this letter, we have included the following:

- An application form, EPA form 8570-1,
- Two copies of the final printed label

If you have any questions or comments, please feel free to contact me at [sherry.hutcheson@uniphos.com](mailto:sherry.hutcheson@uniphos.com) or 229-247-9041.

Best regards,

A handwritten signature in black ink, appearing to read 'Sherry B. Hutcheson'.

Sherry B. Hutcheson  
Regulatory Affairs Manager

	<b>EPA</b> United States <b>Environmental Protection Agency</b> Washington, DC 20460	<input type="checkbox"/> <b>Registration</b> <input type="checkbox"/> <b>Amendment</b> <input checked="" type="checkbox"/> <b>Other:</b>	OPP Identifier Number
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### Application for Pesticide - Section I

1. Company/Product Number 70506-57	2. EPA Product Manager Richard Gebken	3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Bifenture EC	PM# 10	
5. Name and Address of Applicant (Include ZIP Code) <b>United Phosphorus, Inc.</b> <b>630 Freedom Business Center, Suite 402</b> <b>King of Prussia, PA 19406</b>  <input type="checkbox"/> Check if this is a new address		6. <b>Expedited Review.</b> In accordance with FIFRA Section 3(c)(3) (b)(I), my product is similar or identical in composition and labeling to:  EPA Reg. No.  Product Name

### Section - II

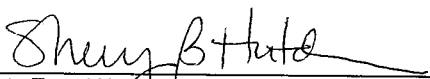
<input type="checkbox"/> Amendment - Explain below. <input type="checkbox"/> Resubmission in response to Agency letter dated _____ <input type="checkbox"/> Notification - Explain below.	<input checked="" type="checkbox"/> Final printed labels in response to Agency letter dated <u>6/12/2013</u> <input type="checkbox"/> "Me Too" Application <input type="checkbox"/> Other - Explain below
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**Explanation:** Use additional page(s) if necessary. (For Section I and Section II.)

### Section - III

1. Material This Product Will Be Packaged In:			
Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes" Unit Packaging wgt.      No. per container	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes" Package wgt.      No. per container	2. Type of Container <input type="checkbox"/> Metal <input type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input checked="" type="checkbox"/> Other (Specify)
* <b>Certification must be submitted</b>			
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container	4. Size(s) Retail Container <b>2.5 gallon, mini bulk</b>	5. Location of Label Directions <input type="checkbox"/> On Label <input checked="" type="checkbox"/> On labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled			

### Section - IV

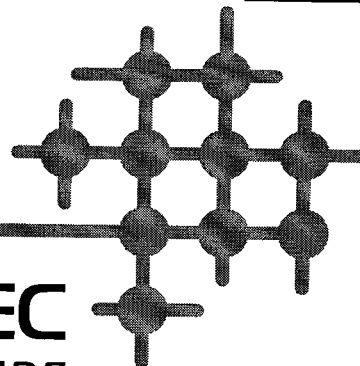
1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application)		
Name Sherry B. Hutcheson	Title Regulatory Affairs Manager	Telephone No. (include Area Code) 229-247-9041
<b>Certification</b> I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped)
2. Signature 	3. Title Regulatory Affairs Manager	
4. Typed Name Sherry B. Hutcheson	5. Date July 12, 2013	

# RESTRICTED USE PESTICIDE

Toxic to fish and aquatic organisms.

For retail sale to and use only by certified applicators, or persons under their direct supervision,  
and only for the uses covered by the certified applicator's certification.

GROUP 3A INSECTICIDE



## BIFENTHUR® EC

AGRICULTURAL INSECTICIDE

### ACTIVE INGREDIENT:

Bifenthrin\* (2 methyl[1,1'-biphenyl]-3-yl) methyl 3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylate . . . . . 25.1%

OTHER INGREDIENTS\*\* . . . . . 74.9%

TOTAL . . . . . 100.0%

\*Cis isomers 97% minimum, trans isomers 3% maximum.

\*\*Contain xylene range aromatic solvents

This product contains 2 pounds active ingredient per gallon.

EPA Reg. No. 70506-57

### KEEP OUT OF REACH OF CHILDREN

### WARNING AVISO

This label must be in the possession of the user at the time of application.  
Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle.  
(If you do not understand the label, find someone to explain it to you in detail.)

#### FIRST AID

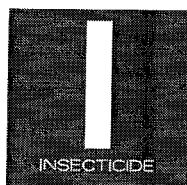
If swallowed	<ul style="list-style-type: none"><li>• Call a poison control center or doctor immediately for treatment advice.</li><li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li><li>• Do not give <b>any</b> liquid to the person.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul>
If in eyes	<ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>
If inhaled	<ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>
If on skin or clothing	<ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>

#### NOTE TO PHYSICIAN

This product is a pyrethroid. If large amounts have been ingested, the stomach and intestine should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided. Contains petroleum distillates. Vomiting may cause aspiration pneumonia.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. FOR EMERGENCY MEDICAL ASSISTANCE, CALL THE ROCKY MOUNTAIN POISON CONTROL CENTER 1-866-673-6671.

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.



NET CONTENTS: \_\_\_\_\_ GALLONS



Manufactured for: United Phosphorus, Inc. • 630 Freedom Business Center, Suite 402 • King of Prussia, PA 19406 U.S.A. • 1-800-438-6071



## PRECAUTIONARY STATEMENTS

### Hazards to Humans and Domestic Animals

## Warning

**WARNING.** May be fatal if swallowed. Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear protective eyewear (goggles, face shield or safety glasses). Harmful if absorbed through skin or inhaled. Avoid breathing spray mist. Avoid contact with skin. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

### Personal Protective Equipment (PPE):

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category E on an EPA chemical resistance category selection chart.

#### Handlers who may be exposed to the dilute through application or other tasks must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, Nitrile rubber, neoprene rubber or Viton
- Shoes plus socks

#### Handlers who may be exposed to the concentrate through mixing, loading, application or other tasks must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as barrier laminate, Nitrile rubber, neoprene rubber, or Viton
- Shoes plus socks
- Protective eyewear

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

## USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

## Environmental Hazards

This pesticide is extremely toxic to fish and aquatic invertebrates. Use with care when applying in areas adjacent to any body of water. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not make applications when weather conditions favor drift from treated areas. Drift and run-off from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwaters.

This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area.

The use of bifenthrin is prohibited in areas that may result in exposure of endangered species to bifenthrin. Prior to use in a particular county contact the local extension service for procedures and precautions to use to protect endangered species.

## Physical/Chemical Hazards

Do not use or store near heat or open flame.

## DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### Resistance:

Any insect/mite population may contain individual insects that may develop resistance to a specific pesticide product used in consecutive generations to control these pests. Prediction of resistance development is uncertain. Follow appropriate resistance management strategies. Contact your local extension specialist or certified crop advisors for any additional pesticide resistance management and/or Integrated Pest Management recommendations for the specific site and pest problems in your area.

If resistance to this product develops in your area, you may find reduced control from this product or other products with a similar mode of action. If poor performance cannot be related to improper application methods or extreme weather, it is possible that a resistant strain of insect may be present. If poor control occurs and resistance is a reasonable cause, immediately consult with your local UPI representative or agricultural advisor for the best alternative method of control for your area.

## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE), and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during restricted-entry interval (REI) of **12** hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls.
- Chemical-resistant gloves, such as barrier laminate or Nitrile rubber or neoprene rubber or Viton.
- Shoes plus socks.

## STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage or disposal.

**Pesticide Storage:** Store above 40°F.

**Pesticide Disposal:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative of the nearest EPA Regional Office for guidance.

**Container Disposal: Refillable container.** Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

**Container Disposal: Nonrefillable container. Do not reuse or refill this container.** Clean container promptly after emptying.

*[For containers smaller than 5 gallons]* Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

*[For containers larger than 5 gallons]* Triple rinse or pressure rinse as follows:

**Triple rinse:** Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

**Pressure rinse:** Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after flow begins to drip.

Then offer for recycling if available, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures allowed by state and local authorities.

## Chemigation Use Directions

Apply this product only through sprinkler including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system.

Use a minimum of 0.75 inch of water per acre for LEPA irrigation. Use 1 to 2 pints per acre of non-emulsified oils when used as the diluent.

The set up and calibration of chemigation equipment are important to achieve control of target insect pests. Crop injury, lack of effectiveness, or illegal residues in the crop can result from non-uniform distribution of treated water. Contact your State Agricultural Extension Service specialists, equipment manufacturers or other experts for advice on the suitability of the equipment set up for optimum control of the target insect pests.

A person knowledgeable of the chemigation system and responsible for its operations, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise. Failure to cease application during a mechanical stoppage may result in undesirable residues to adjacent areas.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.

The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g. diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

Apply Bifenture EC Agricultural Insecticide continuously for the duration of the water application. Dilute Bifenture EC Agricultural Insecticide in sufficient volume to ensure accurate application over the area to be treated. Use a minimum of 0.5 inch per acre of irrigation water for application by chemigation. No agitation is required if a suitable diluent is used. Conduct a diluent test to check that phase separation will not occur during dilution and application. If uniform dilution is not achieved during the entire period of application, undesirable residues or less than desirable control may occur.

## Rotation Crop Restrictions

Crops for which bifenthrin tolerances exist may be rotated at any time. All other crops may be rotated 30 days after the last application.

## Tank-Mixes

Apply Bifenture EC Agricultural Insecticide with other products registered for the same crops. Read and follow all applicable directions, restrictions, and precautions on the EPA-registered labels for other tank mix partners.

## **Buffer Zones**

### **Vegetative Buffer Strip**

Construct and maintain a minimum 10-foot wide vegetative filter strip of grass or other permanent vegetation between the field edge and down gradient aquatic habitat (such as, but not limited to, lakes; reservoirs; rivers; permanent streams; marshes or natural ponds; estuaries; and commercial fish farm ponds).

Only apply products containing bifenthrin onto fields where a maintained vegetative buffer strip of at least 10 feet exists between the field and down gradient aquatic habitat.

For guidance, refer to the following publication for information on constructing and maintaining effective buffers: *Conservation Buffers to Reduce Pesticide Losses*. Natural Resources Conservation Services. USDA, NRCS. 2000. Fort Worth, Texas. 21 pp. <http://www.in.nrcs.usda.gov/technical/agronomy/newconbuf.pdf>.

### **Buffer Zone for Ground Application (groundboom, overhead chemigation, or airblast)**

Do not apply within 25 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

### **Buffer Zone for ULV Aerial Application**

Do not apply within 450 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

### **Buffer Zone for Non-ULV Aerial Application**

Do not apply within 150 feet of aquatic habitats (such as, but not limited to, lakes, reservoirs, rivers, permanent streams, marshes, natural ponds, estuaries, and commercial fish ponds).

## **Spray Drift Requirements**

### **Wind Direction and Speed**

Only apply this product if the wind direction favors on-target deposition. Do not apply when the wind velocity exceeds 15 mph.

### **Temperature Inversions**

Do not make aerial or ground applications into temperature inversions. Inversions are characterized by stable air and increasing temperatures with height above the ground. Mist or fog may indicate the presence of an inversion in humid areas. The applicator may detect the presence of an inversion by producing smoke and observing a smoke layer near the ground surface.

### **Droplet Size**

Use only medium or coarser spray nozzles (for ground and non-ULV aerial application) according to ASAE (S572) definition for standard nozzles. In conditions of low humidity and high temperatures, applicators should use a coarser droplet size.

### **Additional Requirements for Ground Applications**

Wind speed must be measured adjacent to the application site on the upwind side, immediately prior to applications.

For ground boom applications, apply using a nozzle height of no more than 4 feet above the ground or crop canopy.

For airblast applications, turn off outward pointing nozzles at row ends and when spraying the outer two rows. To minimize spray loss over the top in orchard applications, spray must be directed into the canopy.

### **Additional Requirements for Aerial Applications**

The spray boom should be mounted on the aircraft as to minimize drift caused by wingtip or rotor vortices. The minimum practical boom length should be used and must not exceed 75% of the wing span or 80% rotor diameter.

Flight speed and nozzle orientation must be considered in determining droplet size.

Spray must be released at the lowest height consistent with pest control and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.

When applications are made with a cross-wind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind.

## **Instructions for Application**

The following Directions for Use tables provide, in some cases, rate ranges. Use the lower application rates when insect pressure is light to moderate. Use the higher application rates when insect populations are high, when treating mites and when climate is arid.

Cultivation within 10 feet of a water body is prohibited to allow for the growth of a vegetated filter strip.

In New York State this product may not be applied within 100 feet (using ground equipment) to 300 feet (using aerial equipment) of coastal marshes or permanent streams that drain into coastal marshes.

## **INDEX TO CROPS LISTED ON THIS LABEL**

Artichokes  
Beans and Peas (Dry)  
Beans and Peas (Succulent)  
Beets, Garden (see Root Crops)  
Brassica  
Caneberries  
Canola, Crambe, Rapeseed  
Christmas Trees (WA and OR only)  
Cilantro, Coriander  
Citrus  
Conifer Seed Orchards (AL, AR, FL, GA, LA, MS, OK, SC, TN, TX, VA only)  
Cotton  
Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed (At Planting Use)  
Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed (PRE & PPI)  
Field Corn (Grain and Silage), Popcorn, Field Corn Grown for Seed (Foliar Use)  
Sweet Corn, Sweet Corn Grown for Seed (At Planting Use)  
Sweet Corn, Sweet Corn Grown for Seed (Foliar Use)  
Cucurbits  
Fruiting Vegetables  
Grapes  
Hops  
Leafy Brassica Greens (Crop Subgroup 5-B)  
Lettuce, Head  
Mayhaw  
Okra  
Peanut  
Pears  
Root Crops (except Sugarbeets)  
Soybean  
Spinach  
Tobacco  
Tomatoes, Tomatillos (see under Fruiting Vegetable instructions)  
Tree Nut Crops  
Tuberous and Corm Vegetables (Crop Subgroup 1-C)

## ARTICHOKES

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Artichoke Plume Moth Cribrate Weevil	0.10 lb. a.i. (6.4 fl. oz. product)	Begin applications when pest population reaches damaging levels and repeat as necessary to maintain control. Apply in water in a minimum of 75 gallons of spray/A by ground or in a minimum of 10 gallons/A by air. Do not make applications less than 15 days apart. Do not apply more than 0.50 lb. a.i. (32 fl. oz. of product) per acre per season.	5

## SUCCULENT BEANS AND PEAS

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Bean (Phaseolus spp.): Broadbean (succulent) Lima bean (green) Runner bean Snap bean Wax bean Bean (Vigna spp.): Asparagus bean Blackeyed pea Chinese longbean Cowpeas Moth bean Southern pea Yardlong bean Jackbean Soybean (immature seed) Sword bean Pea (Pisum spp.): Dwarf pea Edible-pod pea English pea Garden pea Green pea Snow pea Sugar snap pea Pigeon pea	Flea Beetle Aster Leafhopper Leafhoppers  Alfalfa Caterpillar Aphids Armyworms Beet Fall Southern Yellowstriped Beetles Bean Leaf Cucumber Japanese (Adult) Mexican Bean Sap Bugs Plant Bugs Stink Bugs Tarnished Plant Bugs Cloverworm Corn Earworm Corn Rootworm (Adult) Cutworms European Corn Borer Imported Cabbageworm Leafminers Loopers Pea Leaf Weevil Pea Weevil Saltmarsh Caterpillar Thrips Tobacco Budworm Webworms Western Bean Cutworm Whitefly  Banks Grass Mite Carmine Mite Lygus spp. Twospotted Spider Mite	0.025-0.10 lb. a.i. (1.6-6.4 fl. oz. product)  0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)  0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)	Apply in a minimum of 10 gallons/A by ground or in a minimum of 2 gallons/A by air. When applying by air, substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control thorough coverage is necessary. Do not apply more than 0.20 lb. a.i. (12.8 fl. oz. of product) per acre per season.	3

# DRIED BEANS AND PEAS

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Dried cultivars of: Bean (Lupinus) Bean (Phaseolus) Field Bean Kidney Bean Lima Bean (dry) Navy Bean Pinto Bean Tepary Bean Bean (Vigna) Adzuki Bean Blackeyed Pea Catjang Cowpea Crowder Pea Moth Bean Mung Bean Rice Bean Southern Pea Urd Bean Broad Bean (dry) Chickpea Guar Lablab Bean Lentil Pea (Pisum) Field Pea Pigeon Pea	Flea Beetle Aster Leafhopper Leafhoppers	0.025-0.10 lb. a.i. (1.6-6.4 fl. oz. product)	Apply in a minimum of 10 gallons/A by ground or a minimum of 2 gallons/A by air. When applying by air, substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired.  For best control thorough coverage is necessary.  Do not apply more than 0.20 lb. a.i. (12.8 fl. oz. of product) per acre per season to peas. Do not apply more than 0.30 lb. a.i. (19.2 fl. oz. of product) per acre per season to beans.  Do not make applications less than 7 days apart.	14
	Alfalfa Caterpillar Aphids Armyworms Beet Fall Southern Yellowstriped Beetles Bean Leaf Cucumber Japanese (Adult) Mexican Bean Sap Bugs Plant Bugs Stink Bugs Tarnished Plant Bugs Cloverworm Corn Earworm Corn Rootworm (Adult) Cutworms European Corn Borer Grasshoppers Imported Cabbageworm Leafminers Loopers Pea Leaf Weevil Pea Weevil Saltmarsh Caterpillar Thrips Tobacco Budworm Webworms Western Bean Cutworm Whitefly	0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)		
	Banks Grass Mite Carmine Mite Lygus spp. Twospotted Spider Mite	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		

## BRASSICA

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Head and Stem Brassica Vegetables including: Broccoli Brussels Sprouts Cabbage Cauliflower Cavalo Broccoli Chinese Broccoli (gai lon, white flowering broccoli) Chinese Cabbage (napa) Chinese Mustard Cabbage (gai choy) Kohlrabi	Aphids Armyworms Corn Earworm Crickets Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Ground Beetles Imported Cabbageworm Leafhoppers Loopers Saltmarsh Caterpillar Stink Bugs Thrips Tobacco Budworm Whitefly Wireworm (Adults)	0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)	Apply in water in a minimum of 10 gallons spray/A by ground or in a minimum of 2 gallons/A by air. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired when applying by air.  For best control thorough coverage is necessary. Do not apply more than 0.50 lb. a.i. (32 fl. oz. of product) per acre per season. Do not make more than 5 applications after bloom. Do not make applications less than 7 days apart.	7
	Banks Grass Mite Carmin Mite Lygus spp. Pacific Spider Mite Twospotted Spider Mite	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		

## CANEERRIES

Including Bingleberries, Blackberries, Dewberries, Loganberries, Lowberries, Marionberries, Olallieberries, Raspberries, Youngberries

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Leafrollers Orange Tortrix Root Weevils	0.05-0.10 lb. a.i. (3.2-6.4 fl. oz. product)	Apply in water in a minimum of 50 gallons/A by ground or in a minimum of 10 gallons/A by air.  For best control thorough coverage of foliage is necessary. Make one pre-bloom application and if necessary one post-bloom application. For Crown Borer apply as a drench either post-harvest (fall) or pre-bloom (spring), using 0.10 lb. a.i./A in at least 200 gallons of water/A. Direct the spray at the crown of the plant. For best results, apply at higher water gallonages (up to 400 gallons/A) or prior to a significant rainfall. Do not apply both pre-bloom foliar and pre-bloom drench applications.  Do not apply more than 0.20 lb. a.i. (12.8 fl. oz. of product) per acre per season.	3
Raspberry Crown Borer Spider Mites	0.10 lb. a.i. (6.4 fl. oz. product)		

## CANOLA, CRAMBE, RAPESEED

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Armyworms Cutworms Diamondback Moth Flea Beetle Flea Hopper Grasshopper Loopers Other Lepidopterous Larvae Plant Bug Seedpod Weevil Stink Bugs Thrips Whitefly	0.033-0.04 lb. a.i. (2.1-2.6 fl. oz. product)	Apply in water in a minimum of 10 gallons/A by ground or in a minimum of 2 gallons/A by air. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired when applying by air.  For best control thorough coverage is necessary. Do not apply more than 0.08 lb. a.i. (5.12 fl. oz. of product) per acre per season. Do not make applications less than 14 days apart.	35

## CHRISTMAS TREES

For use only in Washington and Oregon

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS
Root Weevil Spruce Spider Mite	0.06-0.1 lb. a.i. (3.9-6.4 fl. oz. product)	<p>Apply in water in a minimum of 20 gallons/A by ground, or in a minimum of 5 gallons/A by air.</p> <p>Do not apply more than 3 times in a crop year.</p> <p>Do not apply more than 0.10 lb. a.i. (6.4 fl. oz. of product) per acre per treatment.</p> <p>Do not apply through any type of irrigation system.</p> <p>Do not make applications less than 21 days apart.</p> <p>Although this product is not expected to be phytotoxic to Christmas trees, it is recommended that application be made to a small representative group of plants to ensure that a particular variety is not unusually sensitive.</p>

## CILANTRO, CORIANDER

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Beet Armyworm Cabbage Looper Cutworms Flea Beetles Grasshoppers Leafminers Saltmarsh Caterpillar Spotted Cucumber Beetle Thrips Whitefly	0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)	<p>For best control, thorough coverage is necessary. Apply as needed.</p> <p>Apply in water in a minimum of 10 gallons of spray/A by ground or in a minimum of 2 gallons/A by air.</p> <p>Do not make applications less than 7 days apart.</p> <p>Do not apply more than 0.50 lb. a.i. (32 fl. oz. of product) per acre per season.</p>	3
Twospotted Spider Mite	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		

## CITRUS

Not for this use in California unless accompanied by supplemental labeling.

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Blue Green Citrus Root Weevil ( <i>Pachnaeus opalus</i> ) Brown Leaf Notcher ( <i>Epicaerus mexicanus</i> ) Diaprepes Root Weevil ( <i>Diaprepes abbreviatus</i> ) Little Leaf Notcher ( <i>Artipus floridanus</i> ) Southern Blue Green Citrus Root Weevil ( <i>Pachnaeus litus</i> )	0.25-0.50 lb. a.i. (16-32 fl. oz. product)	Apply by ground in a minimum of 40 gallons of dilute spray per acre. Make uniform application to bare soil beneath the tree from the trunk to the drip line of the tree. Use a higher spray volume to insure uniformity of coverage. Pre- and post-application irrigation may also aid in uniform coverage. Bifenture protects tree roots from root weevils by forming a barrier of pesticide through which they must burrow when the neonates fall from the tree after hatching. After application minimize disturbance of the soil beneath the trees to maintain this barrier.  It is important to time applications correctly. Peak emergence of adult Diaprepes Weevil varies by citrus growing region and is also dramatically affected by environmental factors such as soil moisture. Typically, two peaks are observed for Diaprepes, first in spring and then in late summer or early fall. For Southern Blue Green and Blue Green Citrus Weevils and Fuller Rose Beetle, a single emergence peak in the spring is typical. Brown and Little Leaf Notchers typically have three emergence peaks in spring, summer and fall.  Since emergence varies seasonally and by location, observation of adults is the most accurate way to forecast timing of applications. Numbers of adults can be estimated by trapping during spring and summer during the active early morning and later afternoon periods. Egg laying occurs for 8-10 weeks following emergence from the soil, and larval invasion of the soil begins 2-3 weeks following adult emergence. It is critical to have the Bifenture EC soil barrier in place before the neonates drop.  Use Bifenture EC in conjunction with other tools in an integrated pest management program for citrus Root Weevils. Good cultural practices, biological control of larvae and foliar control of adults are all important. Local university extension personnel can provide the most current information to protect citrus trees.	1
Asian Cockroach ( <i>Blattella asahinae</i> ) Fire Ants ( <i>Solenopsis</i> spp.)	0.1-0.25 lb. a.i. (6.4-16 fl. oz. product)	<b>Additional information:</b> Apply to individual citrus resets, when not in solid planted rows, using a hand-gun or shielded sprayer.  Note that although peak emergence of Diaprepes occurs in the spring, weather conditions can cause a minor emergence of this pest in the fall.  Use the highest rate if the citrus grove to be treated is in an area where weather conditions are conducive to primary emergence in the spring. This will provide the longest residual management of Diaprepes Root Weevil.  Use the lower rate if the citrus grove is in an area where weather conditions will promote more than one peak of pest emergence, and make a second application later in the season.  Do not apply through irrigation systems. Do not allow Bifenture EC to contact fruit or foliage. Do not apply more than 0.50 lb. a.i. (32 fl. oz. of product) per acre per season. Do not apply by air.	

## CONIFER SEED ORCHARDS

For use only in the states of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, Oklahoma, South Carolina, Tennessee, Texas, and Virginia

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS
Cone Worms Seed Bugs Seed Worms	0.1-0.2 lb. a.i. (6.4-12.8 fl. oz.)	Apply in water in a minimum of 100-500 gallons/A by ground. Apply in water in a minimum of 10 gallons/A or in refined vegetable oil in a minimum of 0.5 gallons/A by air. For best control thorough coverage is necessary. Begin application 7 days following peak pollen flight and repeat at 30 day intervals to a maximum of 0.60 lb. a.i./A per season. Do not make more than six applications per season, or apply more than 0.60 lb. a.i. (38.4 fl. oz. of product) per acre per season.



## COTTON

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
European Corn Borer Soybean (Banded) Thrips Tobacco Thrips	0.02-0.10 lb. a.i. (1.3-6.4 fl. oz. product)	Apply Bifenture EC in water or refined soybean/cottonseed oil. Apply in water in a minimum of 5 gallons/A by ground or a minimum of 1 gallon/A by air. Substitute 1 quart of emulsified oil for 1 quart water if desired when applying by air.	14
Boll Weevil Bollworm Cabbage Looper Cotton Aphid Cotton Fleahopper Cotton Leafperforator Cutworms Fall Armyworm Plant Bugs Saltmarsh Caterpillar Southern Garden Leafhopper Stink Bugs Tobacco Budworm Whitefly Yellowstriped Armyworm	0.04-0.10 lb. a.i. (2.6-6.4 fl. oz. product)	<b>ULV Application:</b> Apply in refined vegetable oil in a minimum of 1 quart/A with aircraft calibrated to give adequate coverage. <b>Boll Weevil:</b> Apply Bifenture EC every 3 to 4 days until control is acceptable. <b>Mites and Aphids:</b> Apply when pests first appear. Repeat as necessary to maintain control. Use the higher rates once a damaging threshold is established. Apply no more than 0.50 lb. a.i. (32 fl. oz. of product) per acre per season in all states except California. In California, apply no more than 0.30 lb. a.i. (19.2 fl. oz. of product) per acre per season. No more than 10 synthetic pyrethroid applications (of one product or combination of products, including Ambush®, Ammo®, Asana® XL, Baythroid®, Capture®, Danitol®, Karate®, Mustang®, and Scout X-TRA®) may be made to a cotton crop in one growing season. Do not graze livestock in treated areas or cut treated crops for feed.	
Beet Armyworm Carmine Spider Mite Lygus spp. Pink Bollworm Twospotted Spider Mite	0.06-0.10 lb. a.i. (3.8-6.4 fl. oz. product)		

## FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED (AT PLANTING USE)

PESTS CONTROLLED	RATE BIFENTURE EC	APPLICATION INSTRUCTIONS	PHI (days)
Corn Rootworm, Larvae Mexican Northern Southern Western	0.0046 lb. a.i. (0.30 fl. oz. product) per 1,000 linear feet of row	Apply as a 5 to 7 inch T-band at planting over the open seed furrow. Position the spray nozzle behind the planter shoe, in front of the press wheel centered over the row. The table below describes the amount of Bifenture EC needed per acre. Apply in water in a minimum of 3 gallons/A. When using Bifenture EC with fertilizers, check to be sure all components are compatible. For mixture with water or fertilizer, use the following procedure. Fill the spray tank approximately one-half full with water or liquid fertilizer; add the proper amount of Bifenture EC; then add the rest of the water or fertilizer. Sufficient agitation during mixing and application is required to ensure a uniform mixture. Only apply to soil when there is less than 30% cover of crop residue remaining. Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment. Do not apply more than 0.10 lb. a.i. (6.4 fl. oz. of product) per acre per season.	30
Army Cutworm Cutworm Species Grubs Seed Corn Beetle Seed Corn Maggot True Armyworm or Armyworm Species Wireworm	0.0023-0.0046 lb. a.i. (0.15-0.30 fl. oz. product) per 1,000 linear feet of row		

Row spacings	40 in.	38 in.	36 in.	30 in.
Bifenture EC (lb. a.i. per acre)	0.060	0.064	0.069	0.080
Bifenture EC (formulated product, ounces per acre)	3.9	4.1	4.4	5.12

# FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED

Pre-Plant Incorporated (PPI) and Pre-Emergence (PRE)

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS
Armyworm spp. Black Cutworm Seedcorn Maggot Stalkborer White Grub Wireworm	0.047-0.062 lb. a.i./A (3-4 fl. oz./A product) Pre-Plant Incorporated (PPI)	Incorporate Bifenture EC close to the expected depth of the seed, but no deeper than 3 inches. PPI: Use the 3-4 oz./A rate only. Apply alone or with PPI herbicides as a tank mix. PRE: Use the 2.56 oz./A rate when tankmixing and applying with PRE herbicides.
Armyworm spp. Black Cutworm Stalkborer	0.040 lb. a.i./A (2.56 fl. oz./A product) Pre-emergence (PRE)	

# FIELD CORN (GRAIN AND SILAGE), POPCORN, FIELD CORN GROWN FOR SEED

(FOLIAR USE)

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Army Cutworm Beet Armyworm Cereal Leaf Beetle Chinch Bug Common Stalk Borer Corn Earworm Corn Rootworm (Adults) Cucumber Beetle (Adults) Cutworm Species European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Greenbug Japanese Beetle (Adults) Leafhoppers Sap Beetle Southern Armyworm Southern Corn Leaf Beetle Southwestern Corn Borer Stink Bugs Tarnished Plant Bug Thrips True Armyworm or Armyworm Species Webworms Western Bean Cutworm Yellowstriped Armyworm	0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)	Apply in water in a minimum of 10 gallons/A by ground or in a minimum of 2-5 gallons/A by air. For heavy infestations, use 5 gallons of finished spray per acre by aircraft. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control thorough coverage is necessary. <b>Ear-Attacking Pests:</b> Apply Bifenture EC just before silking. <b>Southwestern Corn Borer, European Corn Borer:</b> Apply at or shortly before egg hatch. <b>Other Insect Pests:</b> Apply when insects first appear. Repeat as needed. <b>Banks Grass Mites:</b> Apply when colonies first form before leaf damage or discoloration and prior to movement above the bottom third of the plant. <b>Twospotted Spider Mite and Carmine Mite:</b> Apply when colonies first form before leaf damage or discoloration and before wide-spread mite movement throughout the canopy. Use the higher rates if heavier insect pressure is noted and corn is under heat or drought stress. Tank mixtures with dimethoate at 0.50 lb. a.i. per acre are effective under these conditions. <b>Mite Control in Texas, New Mexico, Oklahoma, and Arizona:</b> Apply in water in a minimum of 10 gallons/A ground or in a minimum of 5 gallons/A by air. Repeat applications as necessary to maintain control, but do not apply more than 0.30 lb. a.i. (19.2 fl. oz. of product) per acre per season including PRE & PPI, at plant plus foliar applications. Do not graze livestock in treated areas or cut treated crops for feed within 30 days of the last application. Do not apply by ultra low volume (ULV) application on corn. If heavy rainfall is imminent, do not make aerial or ground applications to corn.	30
Banks Grass Mite Carmine Mite Twospotted Spider Mite	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		

**SWEET CORN  
SWEET CORN GROWN FOR SEED  
(AT PLANTING USE)**

PESTS CONTROLLED	RATE BIFENTURE EC	APPLICATION INSTRUCTIONS	PHI (days)
Corn Rootworm, Larvae Mexican Northern Southern Western	0.0046 lb. a.i. (0.30 fl. oz. product) per 1,000 linear feet of row	Apply at planting over the open seed furrow. Position the spray nozzle behind the planter shoe, in front of the press wheel centered over the row. The table below describes the amount of Bifenture EC needed per acre. Apply in a minimum of 3 gallons of finished spray per acre.  When using Bifenthrin EC with fertilizers, check to be sure all components are compatible. For mixture with water or fertilizer, use the following procedure. Fill the spray tank approximately one-half full with water or liquid fertilizer; add the proper amount of Bifenture EC; then add the rest of the water or fertilizer. Sufficient agitation during mixing and application is required to ensure a uniform mixture.  Only apply to soil where there is less than 30% cover of crop residue remaining. Do not graze livestock in treated area or cut treated crops for feed within 30 days of treatment.  Do not apply more than 0.10 lb. a.i. (6.4 fl. oz. of product) per acre per season.	30
Army Cutworm Cutworm Species Grubs Seed Corn Beetle Seed Corn Maggot True Armyworm or Armyworm Species Wireworm	0.0023-0.0046 lb. a.i. (0.15-0.30 fl. oz. product) per 1,000 linear feet of row		

Row spacings	40 in.	38 in.	36 in.	30 in.
Bifenture EC (lb. a.i. per acre)	0.060	0.064	0.069	0.080
Bifenture EC (formulated product, ounces per acre)	3.9	4.1	4.4	5.12

**SWEET CORN**  
**SWEET CORN GROWN FOR SEED**  
**(FOLIAR USE)**

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Army Cutworm Aster Leafhopper Beet Armyworm Cereal Leaf Beetle Chinch Bug Common Stalk Borer Corn Earworm Corn Rootworm (Adults) Corn Silkworm Cucumber Beetle (Adults) Cutworm Species European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Greenbug Japanese Beetle (Adults) Leafhoppers Sap Beetle Southern Armyworm Southern Corn Leaf Beetle Southwestern Corn Borer Stink Bugs Tarnished Plant Bug Thrips True Armyworm or Armyworm Species Webworms Western Bean Cutworm Yellowstriped Armyworm	0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)	<p>Apply in water in a minimum of 10 gallons/A by ground or in a minimum of 2 gallons/A by air. For heavy infestations by aircraft, use 5 gallons of finished spray per acre. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired.</p> <p>For best control, thorough coverage is necessary.</p> <p><b>Ear-Attacking Pests:</b> Apply Bifenture EC just before silking.</p> <p><b>Southwestern Corn Borer, European Corn Borer:</b> Apply twice, with the first application at or shortly before egg hatch.</p> <p><b>Other Insect Pests:</b> Apply when insects first appear. Repeat as needed.</p> <p><b>Mite Control:</b> Apply when colonies first form before leaf damage or discoloration and prior to widespread movement throughout the canopy. For Banks Grass Mite, apply prior to movement above the bottom third of the plant.</p> <p>Use the higher rates if heavier insect pressure is noted and corn is under heat or drought stress.</p> <p>Repeat applications as necessary, but do not apply more than 0.20 lb. a.i. (12.8 fl. oz. of product) per acre per season.</p> <p>Do not graze livestock in treated areas or cut treated crops for feed within 1 day of the last application.</p> <p>Do not apply by ultra low volume (ULV) on corn.</p> <p>If heavy rainfall is imminent, do not make aerial or ground applications to corn.</p>	1
Banks Grass Mite Carmine Mite Pacific Spider Mite Twospotted Spider Mite	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		

## CUCURBITS

[illegible]

## FRUITING VEGETABLES

Eggplant, bell and non-bell pepper, pepino, groundcherry, tomato, tomatillo

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Eggplant Pepper (bell and non-bell) Pepino Groundcherry	Armyworms (including: Beet Armyworm, Fall Armyworm, Southern Yellowstriped Armyworm) Cabbage Looper Colorado Potato Beetle Corn Earworm Cucumber Beetle Cutworms European Corn Borer Flea Beetle Leafhoppers Leafminers Loopers Pepper Weevil Plant Bug Stink Bug Thrips Tomato Pinworm Tomato Hornworm Vegetable Leafminer Whitefly	0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)	Apply in at least 2 gallons finished spray per acre by air or at least 10 gallons per acre by ground. When application is made by air, 1-2 quarts emulsified oil may replace 1-2 quarts of water in the finished spray. For best control thorough coverage is necessary. Do not make applications less than 7 days apart. Do not apply more than 0.20 lb. a.i. (12.8 fl. oz. of product) per acre per season.	7
	Banks Grass Mite Broad Mite Carmine Mite Lygus spp. Pacific Spider Mite Twospotted Spider Mite	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		
Tomato Tomatillo	Aphids Armyworms (including: Beet Armyworm, Fall Armyworm, Southern Yellowstriped Armyworm) Bean Leaf Beetle Cabbageworm Carmine Mite Cloverworm Corn Earworm Corn Rootworm Cucumber Beetle Cutworms Diamondback Moth European Corn Borer Flea Beetle Flea hopper Grasshopper Japanese Beetle (Adult) Leafhoppers Loopers Lygus spp. Melonworm Pea Weevil Pea Leaf Weevil Pickworm Plant Bug Rindworm Salt Marsh Caterpillar Sap Beetle Seedpod Weevil Squash Bugs Stink Bug spp. Tobacco Budworm Tarnished Plant Bug Thrips Whitefly	0.033-0.08 lb. a.i. (2.1-5.2 fl. oz. product)	Apply in at least 3 gallons finished spray/A by air or at least 15 gallons/A by ground. For best control thorough coverage is necessary. Do not make applications less than 7 days apart. Do not make more than 4 applications per season.	1
	Twospotted Spider Mite	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		

## GRAPES

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Cutworms Eastern Grape Lady Beetle ( <i>Scymnus</i> ) Grape Berry Moth Japanese Beetle (Adult) Leafhopper Variegated Leafhopper Western Grape Leafhopper	0.05-0.10 lb. a.i. (3.2-6.4 fl. oz. product)	Apply in a minimum of 25 gallons/A by ground or in a minimum of 10 gallons/A by air. Substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control thorough coverage is necessary. Use the higher rate when insect pressure is moderate to severe. Do not apply more than 0.10 lb. a.i. (6.4 fl. oz. of product) per acre per season.	30
Black Vine Weevil Glassywinged Sharpshooter Twospotted Spider Mite	0.10 lb. a.i. (6.4 fl. oz. product)		

## HOPS

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Armyworms Cutworms Leafrollers Loopers	0.06-0.1 lb. a.i. (3.8-6.4 fl. oz. product)	Do not apply more than 0.10 lb. a.i. (6.4 fl. oz. of product) per acre per application. Do not apply more than 0.30 lb. a.i. (19.2 fl. oz. of product) per acre per season. Do not make applications less than 21 days apart. <b>By ground:</b> Full coverage is necessary for best results. For early season, use 100-150 gallons of spray per acre. For late season, use 200-250 gallons of spray per acre. <b>Root Weevil:</b> Direct the spray to the base of the plant. Spray 3 feet up the vine and the soil surface 1.5 to 2 feet around the plant. <b>Twospotted Spider Mites, for late season control:</b> Apply at least 6.4 fl. oz. (0.10 lb. a.i.) per application in a minimum of 10 gallons per acre by air. Do not apply by ultra low volume (ULV) application to hops.	14
Root Weevils	0.05-0.1 lb. a.i. (3.2-6.4 fl. oz. product)		
Twospotted Spider Mite	0.1 lb. a.i. (6.4 fl. oz. product)		

## LEAFY BRASSICAS Crop Subgroup 5-B

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Broccoli raab Chinese cabbage (bok choy) Collards Kale Mizuna Mustard Greens Mustard Spinach Rape Greens	Aphids Armyworms Corn Earworm Crickets Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Grasshoppers Ground Beetles Imported Cabbageworm Japanese Beetles (Adults) Leafhoppers Loopers Saltmarsh Caterpillar Stink Bugs Thrips Tobacco Budworm Whitefly Wireworm (Adults)	0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)	Apply in water in a minimum of 10 gallons/A by ground or in a minimum of 2 gallons/A by air. For best control thorough coverage of foliage is necessary. When applied by air, 1-2 quarts of emulsified oil may be substituted for 1-2 quarts of water in the finished spray. Do not make applications less than 7 days apart. Do not apply more than 0.40 lb. a.i. (25.6 fl. oz. of product) per acre per season.	7
	Banks Grass Mite Carmine Mite Lygus spp. Pacific Spider Mite Twospotted Spider Mite	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		

## LETTUCE, HEAD

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Armyworms Cabbage Maggot Corn Earworm Cucumber Beetles Cutworms Diamondback Moth Flea Beetles Grasshoppers Imported Cabbageworm Leafhoppers Loopers Salt Marsh Caterpillar Stink Bug spp. Thrips Tobacco Budworm Whitefly	0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)	Apply in water in a minimum of 15 gallons/A by ground or in 5 gallons/A by air. For air application, substitute 1-2 quarts of emulsified oil for 1-2 quarts water if desired. For best control thorough coverage is necessary. Do not make applications less than 7 days apart. Do not apply more than 0.50 lb. a.i. (32 fl. oz. of product) per acre per season.	7
Carmine Mite Lygus spp. Twospotted Spider Mite	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		

## MAYHAW

Not for this use in California unless accompanied by supplemental labeling.

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Plum Curculio	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)	Apply in at least 28 gallons per acre. Do not apply more than once every 7 days. Do not apply more than 0.20 lb. a.i. (12.8 fl. oz. of product) per acre per season.	30

## OKRA

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Armyworms Corn Earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Japanese Beetles (Adult) Leafminers Loopers Stink Bugs Thrips Whitefly	0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)	For best control, thorough coverage is necessary. Apply as needed. Apply in water in a minimum of 10 gallons of spray/A by ground or in a minimum of 2 gallons/A by air. Do not make applications less than 7 days apart. Do not apply more than 0.20 lb. a.i. (12.8 fl. oz. of product) per acre per season.	7
Broad Mite Carmine Mite Lygus spp. Twospotted Spider Mite	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		



## PEANUT

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Beet Armyworm Corn Earworm Cutworm spp. Fall Armyworm Grasshoppers Green Cloverworm Leafhoppers Lesser Cornstalk Borer Loopers Rednecked Peanut Worm Southern Armyworm Southern Corn Rootworm Stink Bugs Threecornered Alfalfa Hopper Velvetbean Caterpillar Yellowstriped Armyworm	0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)	Apply in at least 10 gallons of water. Do not apply more than once every 14 days. Do not feed green immature plants and peanut hay to livestock. Do not apply more than 0.50 lb. a.i. (32 fl. oz. of product) per acre per season.	14
Aphids Spider Mites Thrips Whitefly	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		

## PEARS

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Aphids Codling Moth Cutworms Green Fruitworm Leafhoppers Leafminers Leafrollers Lygus spp. Plant Bugs Plum Curculio San Jose Scale (Crawlers) Stink Bugs Tarnished Plant Bugs	0.04-0.2 lb. a.i. (2.6-12.8 fl. oz. product)	<b>By ground:</b> Apply as a dilute (minimum of 200 gallons of finished spray per acre) or concentrate (minimum of 50 gallons of finished spray per acre) spray. For best control thorough coverage is necessary. <b>By air:</b> Apply in a minimum of 10 gallons per acre. Do not apply more than 0.50 lb. a.i. (32 fl. oz. of product) per acre per season with no more than 0.45 lb. a.i. (28.8 fl. oz. of product) per acre applied after petal fall. Apply as necessary to maintain control and repeat applications at 30 day intervals. Do not graze livestock in treated orchards or cut treated cover crops for feed.	14
Twospotted Spider Mite Yellow Mite	0.06-0.2 lb. a.i. (3.8-12.8 fl. oz. product)		
European Red Mite	0.08-0.2 lb. a.i. (5.12-12.8 fl. oz. product)		

### ROOT CROPS (except Sugarbeets)

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Edible burdock Carrot Celeriac Chervil Chicory Ginseng Horseradish Parsley Parsnip Radish Oriental radish Rutabaga Salsify Black salsify Spanish salsify Skirret Turnip	Aphids Beet Armyworm Celery Leaf Tier Corn Earworm Cross-striped Cabbageworm Cutworms Diamondback Moth European Corn Borer Fall Armyworm Fire Ants Flea Beetles Green Cloverworm Hornworms Imported Cabbageworm Loopers Southern Armyworm Spider Mites Tobacco Budworm Velvetbean Caterpillar Whitefly Yellowstriped Armyworm	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)	Apply in at least 25 gallons per acre by ground. Do not apply more than once every 7 days. Do not apply more than 0.50 lb. a.i. (32 fl. oz. of product) per acre per season.	21
Garden Beets	Aphids Fire Ants Flea Beetles Lepidopterous Larvae Spider Mites Whitefly	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)	Make foliar applications in a minimum of 25 gallons/A. Do not apply more than 0.40 lb. a.i. (25.6 fl. oz. of product) per acre per season. Do not apply more often than every 7 days.	1

## SOYBEAN

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Alfalfa Caterpillar Aphids Aster Leafhopper Bean Leaf Beetle Beet Armyworm* Cloverworm Corn Earworm Corn Rootworm (Adult) Cucumber Beetles Cutworms European Corn Borer Fall Armyworm Flea Beetle Grasshoppers Imported Cabbageworm Japanese Beetle (Adult) Pea Leaf Weevil Pea Weevil Plant Bug Saltmarsh Caterpillar Sap Beetle Southern Armyworm Stink Bugs Tarnished Plant Bug Thrips Tobacco Budworm* Webworms Western Bean Cutworm Whitefly Yellowstriped Armyworm Soybean Aphid	0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)	Make foliar applications in at least 10 gallons per acre. Do not apply more than once every 30 days.  Do not apply more than 0.30 lb. a.i. (19.2 fl. oz. of product) per acre per season. *Because pyrethroid resistance is common for Beet Armyworm and Tobacco Budworm, consult your local or state agricultural authorities to find out if resistant pest populations are in the treatment area. If so, refer to the resistance information in the Directions for Use section of this label.	18
Lygus spp. Whitefly Twospotted Spider Mite	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		

## SPINACH

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Armyworms Colorado Potato Beetle Corn Earworm Cucumber Beetles Cutworms European Corn Borer Flea Beetles Leafminers Loopers Pepper Weevil Thrips Tomato Hornworm Tomato Pinworm Whitefly	0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)	Apply in water at 10-50 gallons/A by ground or 5-50 gallons/A by air. <b>Whiteflies:</b> Make up to 4 foliar treatments of Bifenture EC by ground or air at rates of up to 0.4 pint (0.10 lb. active) per acre. Repeat applications at 7 day intervals. <b>Fire Ants:</b> Make up to 4 applications of Bifenture EC to the soil at planting or as a foliar treatment by ground or air at rates of up to 0.4 pint (0.10 lb. active) per acre. Repeat application at 7 day intervals. Do not make applications less than 7 days apart. Do not apply more than 0.40 lb. a.i. (25.6 fl. oz. of product) per acre per season.	40
Banks Grass Mite Broad Mite Carmine Mite Fire Ants Lygus spp. Pacific Spider Mite Twospotted Spider Mite	0.08-0.10 lb. a.i. (5.12-6.4 fl. oz. product)		

## TOBACCO

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS
Armyworm spp. Cutworm spp. Mole Crickets Stalkborers Tobacco Flea Beetle (Larvae) White Grubs Wireworms	0.0625-0.10 lb. a.i. (4.0-6.4 fl. oz. product)	<b>Pre-transplant soil application:</b> Apply specified rate in a minimum of 10 gallons/A. To control below-ground pests, use equipment which will incorporate the application into the top 4" of soil. <b>At-transplant water treatment application:</b> Apply specified rate in a water treatment volume of 10-200 gallons/A.
Aphid spp. Armyworm spp. Chinch Bugs Cucumber Beetles Cutworm spp. Flea Beetle (Adults) Grasshoppers Green Bugs Japanese Beetles Saltmarsh Caterpillar Stink Bugs Tarnished Plant Bugs Thrips Tobacco Budworm* Tobacco Hornworm Whiteflies	0.04-0.10 lb. a.i. (2.56-6.4 fl. oz. product)	<b>Foliar application:</b> Apply specified rate in a minimum of 10 gallons/A up to and including layby. Do not make more than 2 foliar applications per season. May be tank mixed with other herbicides registered for tobacco use. *See Resistance section on this label for more information.
Lygus spp. Spider Mites	0.1 lb. a.i. (6.4 fl. oz. product)	
Do not apply later than layby. Do not apply more than 0.20 lb. a.i. (12.8 fl. oz. of product) per acre per season.		

## TREE NUT CROPS

Almond, Beech nut, Brazil nut, Butternut, Cashew, Chestnut, Chinquapin, Filbert (hazelnut), Hickory nut, Macadamia nut (bush nut), Pecan, Pistachio, Walnut (black and English)

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Black Pecan Aphid Codling Moth Filbert Worm Hickory Shuckworm Leaf-footed Bugs Navel Orangeworm Oblique Banded Leafroller Peach Twig Borer Pecan Leaf Casebearer Pecan Nut Casebearer Pecan Phylloxera Plant Bugs Stink Bugs Walnut Aphid Yellow Pecan Aphid	0.05-0.20 lb. a.i. (3.2-12.8 fl. oz. product)	<b>Ground Application:</b> Apply as a dilute (minimum of 200 gallons per acre) or concentrate (minimum of 50 gallons per acre) spray in sufficient water to provide thorough coverage. <b>Air Application:</b> Apply in a minimum of 10 gallons of finished spray per acre. <b>Minimum Spray Intervals:</b> Apply Bifenture EC as needed to maintain control, but do not apply at intervals sooner than 15 days. Do not apply more than 0.20 lb. a.i. (12.8 fl. oz. of product) per acre per application. Do not apply more than 0.50 lb. a.i. (32 fl. oz. of product) per acre per season. Do not graze livestock in treated orchards or cut treated cover crops for feed.	Pecans: 21 Others: 7
European Red Mite Spider Mites	0.08-0.20 lb. a.i. (5.1-12.8 fl. oz. product)		
Fire Ants Walnut Husk Fly	0.1-0.2 lb. a.i. (6.4-12.8 fl. oz. product)		

### TUBEROUS AND CORM VEGETABLES (Crop Subgroup 1C)

CROP	PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	APPLICATION INSTRUCTIONS	PHI (days)
Arracacha Arrowroot Artichoke (Chinese and Jerusalem) Cassava (bitter and sweet) Chayote (root) Chufa Dasheen Edible Canna Ginger Leren Potato Sweet Potato Tanier True Yam Turmeric Yam Bean	Banded Cucumber Beetle Black Flea Beetle Corn Wireworm Cucumber Beetle Japanese Beetle Grubs June Beetle Rootworms Southern Potato Wireworm Sugarcane Beetle Sweetpotato Flea Beetle Sweetpotato Weevil Tobacco Wireworm Whitefringed Beetle White Grub	At-Plant 0.30 lb. a.i. (19.2 fl. oz. product) At Cultivation or Lay-By 0.05-0.15 lb. a.i. (3.2-9.6 fl. oz. product) Foliar 0.033-0.10 lb. a.i. (2.1-6.4 fl. oz. product)	Bifenture EC may be applied at planting time for the control of wireworms, rootworms and white grubs. Apply at the rate of 0.30 lb. a.i./A as a soil incorporated broadcast, directed bed spray or T-band spray into the planting furrow. Bifenture EC may be applied as a cultivation or lay-by treatment for the control of wireworms, rootworms, and white grubs. Apply to the drill area and cover with soil utilizing cultivation equipment set to throw soil to the drill area. Apply as a banded spray over the row at a rate of 0.05 to 0.15 lb. a.i./A (3.2 to 9.5 fl. oz. of product) in 10 gallons of spray per acre. Bifenture EC may be applied as a foliar spray for the control of the adult life stages of flea beetles, click beetles (wireworms), cucumber beetles (rootworms), white fringed beetles, and May/June beetles (white grubs). Apply at a rate of 0.033 to 0.10 lb. a.i./A (2.1 to 6.4 fl. oz. of product) in 10 gallons of spray by ground or 3 gallons of spray by air. Do not make more than 2 foliar applications per season. Do not make applications less than 21 days apart. Do not apply more than 0.50 lb. a.i. (32 fl. oz. of product) per acre per season, including soil applications.	21

## SOD FARMS

**Not for use in California unless accompanied by supplemental labeling.**

In New York State, this product may NOT be applied to any grass or turf area within 100 feet of a water body (lake, pond, river, stream, wetland, or drainage ditch).

In New York State, DO make a single repeat application of this product if there are signs of renewed insect activity, but not sooner than two weeks after the first application.

PESTS CONTROLLED	RATE BIFENTURE EC/ACRE	RATE BIFENTURE EC FL. OZ./1,000 SQ. FT.
Armyworms <sup>1</sup> Cutworms <sup>1</sup> Sod Webworm <sup>1</sup>	0.03-0.05 lb. a.i. (2.2-3.5 fl. oz. product)	0.05-0.08 fl. oz. product
Annual Bluegrass Weevil ( <i>Hyperodes</i> ) (Adult) <sup>2</sup> Banks Grass Mite <sup>6</sup> Billbugs (Adult) <sup>3</sup> Black Turfgrass Ataenius (Adult) <sup>4</sup> Crickets Earwigs Fleas (Adult) Grasshoppers Mealybugs Mites <sup>6</sup>	0.05-0.11 lb. a.i. (3.5-7.0 fl. oz. product)	0.08-0.16 fl. oz. product
Ants Chinch Bugs <sup>5</sup> Fleas (Larvae) <sup>7</sup> Imported Fire Ants <sup>8</sup> Japanese Beetle (Adult) Mole Cricket (Adult) <sup>9</sup> Mole Cricket (Nymph) <sup>10</sup> Ticks <sup>11</sup>	0.11-0.21 lb. a.i. (7.0-14.0 fl. oz. product)	0.16-0.32 fl. oz. product

<sup>1</sup> **Armyworms, Cutworms, and Sod Webworms:** For best control, delay watering (irrigation) or mowing for 24 hours after application. Higher application rates (up to 0.32 fl. oz. per 1,000 sq. ft.) may be required if grass is being maintained at a mowing height of greater than 1" in periods of high pest pressure.

<sup>2</sup> **Annual Bluegrass Weevil (*Hyperodes*) Adults:** Time applications to control adult weevils as they leave their overwintering sites and move into grass. Generally, this movement begins when Forsythia is in full bloom and finishes when flowering dogwood is in full bloom. Your State Cooperative Extension Services can give more specific information regarding the timing of applications.

<sup>3</sup> **Billbug Adults:** Apply when adult billbugs are first seen during April and May. Consult degree day models to optimize application timing, and consult your State Cooperative Extension Service for information specific to your region. In temperate regions, apply in spring to also provide control of over-wintered chinch bugs.

<sup>4</sup> **Black Turfgrass Ataenius Adults:** Apply during May and July to control the first and second generations, respectively. Time the May application to coincide with the full bloom stage of Vanhoutte spiraea (*Spiraea vanhouttei*) and horse chestnut (*Aesculus hippocastanum*). Time the July application to coincide with the blooming of Rose of Sharon (*Hibiscus syriacus*).

<sup>5</sup> **Chinch Bugs:** Irrigate the grass area before treatment to optimize penetration of the product to the base of grass plants and the thatch layer, where chinch bugs are found. If the thatch layer is excessive or if a relatively long mowing height is being maintained, use higher volume applications. Chinch Bugs are difficult to control in grasses and the higher labeled application rates may be necessary to control populations containing both nymphs and adults during the middle of the summer.

<sup>6</sup> **Mites:** For best control of eriophyid mites, apply in combination with the labeled application rate of a surfactant. A second application timed five to seven days after the first may be necessary for acceptable control.

<sup>7</sup> **Flea Larvae:** These pests develop in the soil of shaded areas accessible to pets and other animals. When treating these areas, use a higher application volume to ensure the insecticide penetrates into the soil. Note: if the lawn area is being treated with this product at 0.16 fl. oz./1,000 sq. ft. for adult flea control, then the larval application rate may be achieved by increasing the application volume two- to four-fold.

<sup>8</sup> **Imported Fire Ants:** For best control, combine broadcast applications (to control foraging workers and newly mated fly-in queens) with mound drenches (to control existing colonies). If the soil is not moist, irrigate before application or use a high volume application. For broadcast treatments, use 0.32 fl. oz./1,000 sq. ft. Treat mounds by diluting 0.05 fl. oz. Bifenture EC per gallon of water, and apply 1 to 2 gallons of finished spray per mound. Treat the mounds with enough force to break the apex and allow the solution to flow into the ant tunnels. Also treat a four-foot diameter circle around the mound. For best results, apply in cool weather (65 - 80°F) or in early morning or late evening hours.

<sup>9</sup> **Mole Cricket Adults:** Adult mole crickets are difficult to control because preferred grass areas are continuously invaded during the early spring. Apply as late in the day as possible, and water in with up to 0.5 inches of water immediately following treatment. If the soil is not moist, irrigate before application to bring the crickets closer to the soil surface and maximize exposure to the insecticide. In grass areas that receive pressure from adult mole crickets, treat at peak egg hatch to ensure control of subsequent nymph populations (see footnote 10).

<sup>10</sup> **Mole Cricket Nymphs:** In grass areas that receive intense pressure from adult mole crickets, treat immediately before peak egg hatch. Best control is achieved at that time because young nymphs are more susceptible to insecticides and they are located near the soil surface. To control larger, more damaging nymphs later in the year a higher application rate and more frequent applications may be necessary. Apply as late in the day as possible and water in with up to 0.5 inches of water immediately following treatment. If the soil is not moist, irrigate before application to bring the crickets closer to the soil surface and maximize exposure to the insecticide.

<sup>11</sup> **Ticks (including ticks that may transmit Lyme Disease and Rocky Mountain Spotted Fever):** Do not make spot applications, but treat the entire area where exposure to ticks may occur. When treating areas with dense ground cover or heavy leaf litter, use higher spray volumes. Note that ticks may be reintroduced from surrounding areas or on host animals and retreatment may be necessary to achieve and/or maintain control during periods of high pest pressure. Limit repeat application to no more than once per seven days, and only if there are signs of renewed activity. **Deer Ticks (*Ixodes* sp.):** This pest has a complex life-cycle that ranges over a two-year period and involves four life stages. Apply in the late fall and/or early spring to control adult ticks (usually located on brush or grass above the soil surface), and in mid to late spring to control larvae and nymphs (found in the soil and leaf litter). **American Dog Ticks:** These ticks congregate along paths or roadways where humans are likely to be encountered. Apply as necessary from mid-spring to early fall to control larvae, nymphs, and adults.

**IMPORTANT INFORMATION  
READ BEFORE USING PRODUCT**

**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

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